TOSHIBA

FILE NO. 030-200411

SERVICE MANUAL

Colour Television

32ZP46P
36ZP46P

Jul. 2004 (YC/X)

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CHAPTER 1 GENERAL ADJUSTMENTS

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is (A) kV at zero beam current (minimum brightness) under a (C) V AC power source. The high voltage must not, under any circumstances, exceed (B) kV.

   Refer to table-1 for high voltage (A), (B) & AC voltage (C). (See SETTING & ADJUSTING DATA on page 16)

   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
3. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF SERVICE MANUAL.

SET-UP ADJUSTMENT

■ The following adjustments should be made when a complete realignment is required or a new picture tube is installed. Perform the adjustments in order as follows :

1. Color Purity
2. Convergence
3. White Balance

Note: The PURITY/CONVERGENCE MAGNET assembly and rubber wedges need mechanical positioning. Refer to figure 1.

COLOR PURITY ADUSTMENT

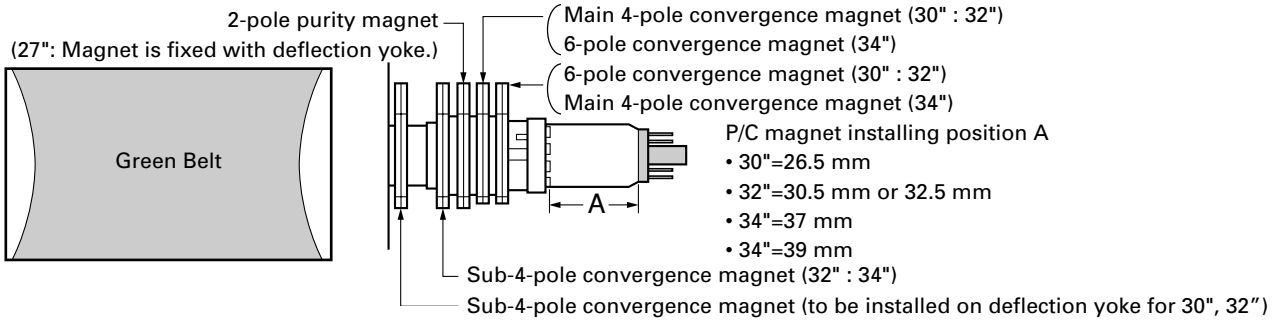
(1)Let the screen face in the installing direction or toward the east (when it is to be moved), bring up the service mode screen after demagnetizing (front, left, right, and top) with the degaussing coil, receive white signals by pressing the [TV/VIDEO] button, and then the receiver should be operated for more than 40 minutes.

(2)Perform rough adjustment of the central convergence with the P/C magnet according to the adjustment item.

(3)Receive built-in green signals, loosen set screws on the deflection yoke, remove rubber wedges, and shift the deflection yoke to toward front.

(4)Move alternately the two 2-pole magnets of the P/C magnets so that the green raster can come to the center of the screen.

Figure 1.

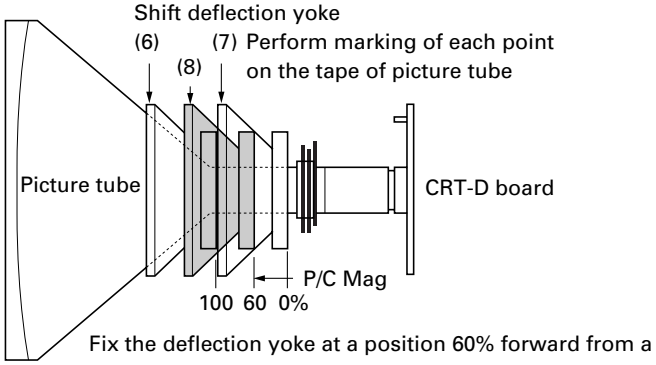

2-pole purity magnet
(27": Magnet is fixed with deflection yoke.)
Green Belt
Main 4-pole convergence magnet (30" : 32")
6-pole convergence magnet (34")
6-pole convergence magnet (30" : 32")
Main 4-pole convergence magnet (34")
A
P/C magnet installing position A
• 30"=26.5 mm
• 32"=30.5 mm or 32.5 mm
• 34"=37 mm
• 34"=39 mm
Sub-4-pole convergence magnet (32" : 34")
Sub-4-pole convergence magnet (to be installed on deflection yoke for 30", 32")

(5)Receive built-in red and blue signals, check that there is no inclination of the single color raster toward one side, and if each color tilts to a great extent, make adjustment with the 2-pole magnet so that the 3 colors will come to the center evenly.

(6)Receive the green raster, shift the deflection yoke from a foremost position (hitting against the picture tube) to a backward position horizontally, stop the deflection yoke at a position where it begins to become a green raster, and perform accurate marking on the picture tube.

(7)Shift the deflection yoke further backward, and perform accurate marking at a position where the green raster begins to being luck.

(8)Fix the deflection yoke at a position 60% forward within the range marked in items (6) and (7) above.


Shift deflection yoke
(6)
(8)
(7) Perform marking of each point on the tape of picture tube
Picture tube
CRT-D board
P/C Mag
100 60 0%
Fix the deflection yoke at a position 60% forward from a point between (6) and (7)

CONVERGENCE ADJUSTMENTS

* Adjust the convergence magnet to get vest convergence in the the order to (1) ~ (5).

■ CENTER CONVERGENCE:

(1)Receive the white crosshatch or dot pattern from the service signal generator.

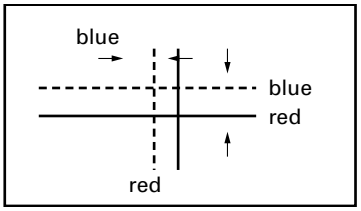
(2)Use the 2 pieces of main 4-pole magnets of P/C magnets, change the open angle, and align the red and blue vertical lines on the screen center.

(3)Freeze the open angle of the main 4-pole magnets, turn them simultaneously, and align the horizontal lines.

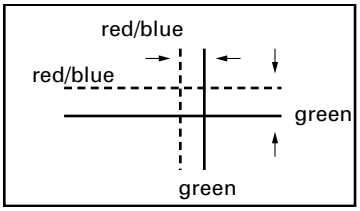
(4)Take the same steps for items (2) and (3) above and align red/blue with green on the screen center using two 6-pole magnets.

(5)Adjust the sub-4-pole magnets only in case there is any deviation of Xv bow-shaped convergence. (To be usually set at the initial position)

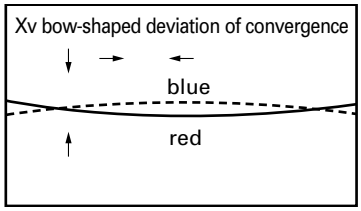
Align both sides with the sub-4-pole magnets and minimize the deviation of blue and red with the main 4-pole magnets.



Main 4-pole magnet



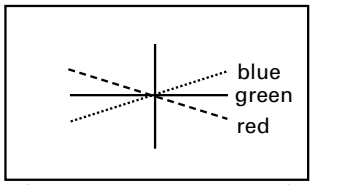
6-pole magnet

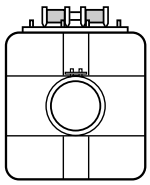


Sub-4-pole magnet

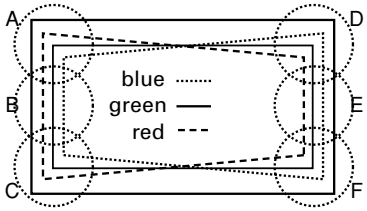
■ CIRCUMFERENCE CONVERGENCE:

* Perform correction in the following manner.

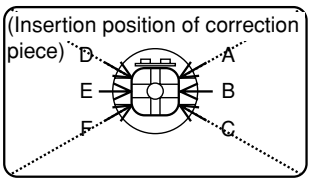




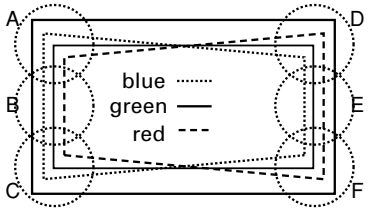
• Adjust coils and minimize deviation
(The 27" unit has coils underneath it)



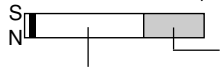
(Parts code:23 948 274) TC-S



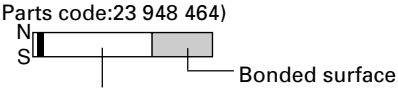
*Insert the correction piece between the picture tube and the deflection yoke.



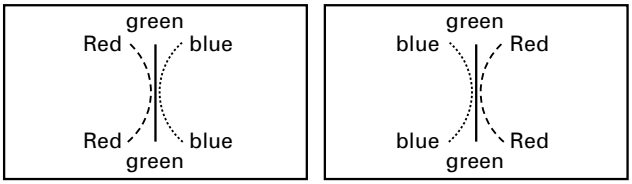
(Parts code:23 948 464)



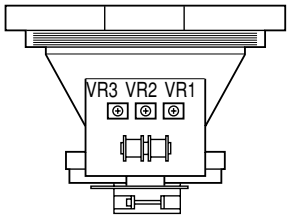
Blue color or blue mark



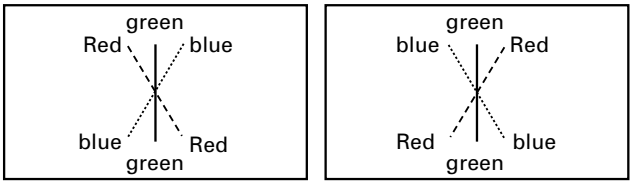
Adjust VR 1 and minimize the deviation of YH. *Only 27", 30" and 32".



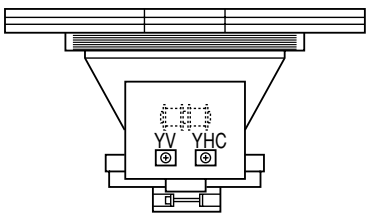
■ 30", 27", 32"



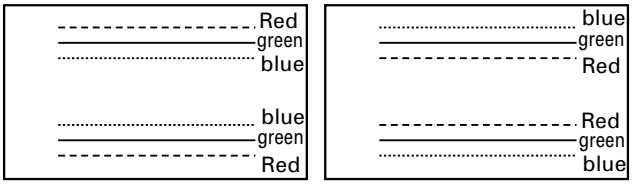
Adjust VR 2 (YHC) and minimize the deviation of YH.

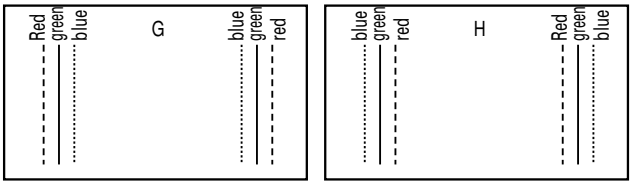


■ 34"

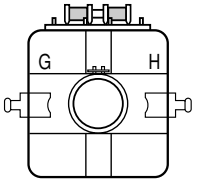


Adjust VR 3 (YV) and minimize the deviation of YV.





27" (Part No. 23 947 371)
32", 30" (Part No. 23 947 121)
34" (Part No. 23 993 080)



Perform correction by inserting the correction piece into the clearance of terminal board coils of the deflection yoke.

Note:

Perform insertion by turning the metal side to the terminal board side of the deflection yoke.

SERVICE MODE

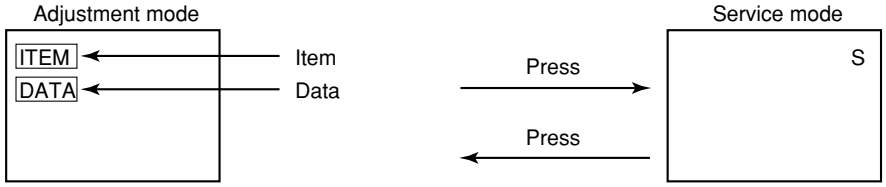
1. ENTERING TO SERVICE MODE

1) Press 🔇 button once on Remote Control.
2) Press 🔇 button again to keep pressing.
3) While pressing the 🔇 button, press MENU button on TV set.

(Service mode display)

2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.



3. KEY FUNCTION IN THE SERVICE MODE

The following key entry during display of adjustment menu provides special functions.

A single horizontal line ON/OFF:	INFO button (on Remote) or ⊖ button (on TV)
Test signal selection :	⊖ button (on Remote)
Selection of the adjustment items :	Channel ▲/▼ (on TV or Remote)
Change of the data value :	Volume ◿ +/– (on TV or Remote)
Adjustment menu mode ON/OFF :	MENU button (on TV)
Initialization of the memory (QA02) :	CALL + Channel button on TV (▲)
Reset the count of operating protect circuit to “00”:	CALL + Channel button on TV (▼)
“RCUT” selection :	1 button
“GCUT” selection :	2 button
“BCUT” selection :	3 button
“CNTX” (or “SCNT”) selection :	4 button
“COLC” selection :	5 button– – – – – Color thickness correction
“TNTC” selection :	6 button note: Displayed differently as shown below, depending on the setting of the receiving color system.
Self diagnostic display ON/OFF :	9 button COLP (PAL) COLC (NTSC) COLS (SECAM)

CAUTION : Never try to perform initialization unless you have changed the memory IC.

4. SELECTING THE ADJUSTING ITEMS

1) Every pressing of CHANNEL ▲ button in the service mode changes the adjustment items in the order of table-2. (▼ button for reverse order)

Refer to table-2 for preset data of adjustment mode.
(See SETTING & ADJUSTING DATA on page 16)

5. ADJUSTING THE DATA

1) Pressing of VOLUME ◿ +/– button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

6. EXIT FROM SERVICE MODE

1) Pressing POWER button to turn off the TV once.

■ INITIALIZATION OF MEMORY DATA OF QA02

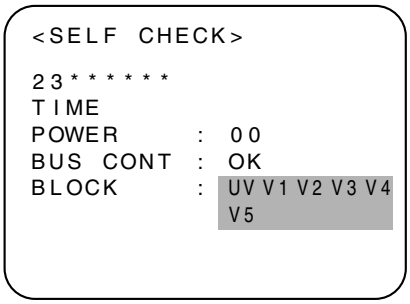
After replacing QA02, the following initialization is required.

1. Enter the service mode, then select any register item.
2. Press and hold the CALL button on the Remote, then press the CHANNEL ▲ button on the TV. The initialization of QA02 has been complated.
3. Check the picture carefully. If necessary, adjust any adjustment item above. Perform “Auto search Memory” on the owner’s manual.

CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

8. SELF DIAGNOSTIC FUNCTION

1) Press “9” button on Remote Control during display of adjustment menu in the service mode.
   The diagnosis will begin to check if interface among IC’s are executed properly.
2) During diagnosis, the following displays are shown.



Indicated color of mode now selected : Green and Red
Indicated color of other modes : White

Green : Normal
Red : The microcomputer operates to provide judgement of no video signal. The red color is still indicated though the signal is input, failure may exist in input signal line including QV01.
QV01 : In case of indication green ---Normal
In case of indication red with input signal----
Failure may exist in output line including QV01.

① Part number of microcomputer (QA01)
② Operation number of protecting circuit ----“00” is normal.
When indication is other than “00”, overcurrent apts to flow, and circuit parts may possibly be damaged.
③ BUS CONT ----“OK” is normal.
When indication shows “Q ○○○ NG”, the device with the number may possibly be damaged.
④ BLOCK
UV : TV reception mode
V1 : VIDEO 1 input mode (→①)
V2 : VIDEO 2 input mode (→②)
V3 : VIDEO 3 input mode (→③)
V4 : VIDEO 4 input mode (→④)
V5 : VIDEO 5 input mode (→⑤)

***** The items marked with ■ are not usable to display in the SELF DIAGNOSTIC FUCTION for some model.

DESIGN MODE

1. ENTERING TO DESIGN MODE

1) Select the Service mode. 2) While pressing 🔇 or CALL button on Remote and press MENU button on TV. 3) Press MENU button on TV.

(Design mode) (Adjustment mode)

When QA02 is initialized, items “OPT0” and “OPT1” of DESIGN MODE are set to the data of the representative model of this chassis family.
Therefore, because ON-SCREEN specification remains in the state of the representative of model. This model is required to reset the data of items “OPT0” and “OPT1”.

2. SELECTING THE ADJUSTING ITEMS

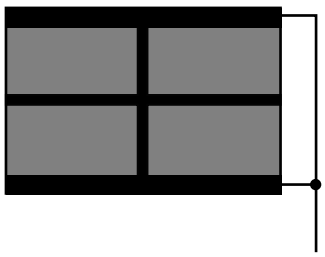
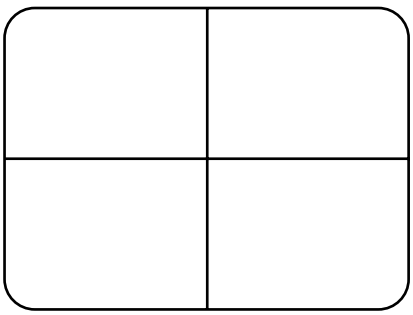
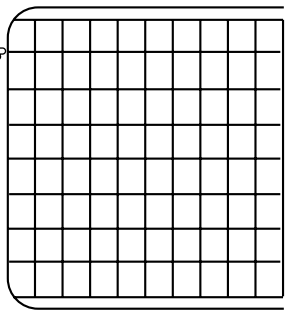
Every pressing of CHANNEL ▼ button in the design mode changes the adjustment items in the order of table-3.
(▲ button for reverse order)

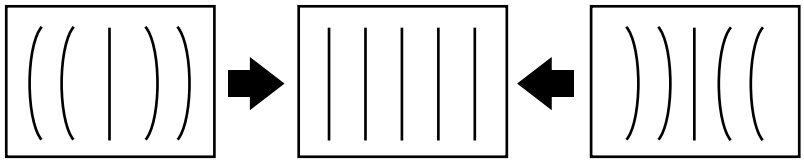
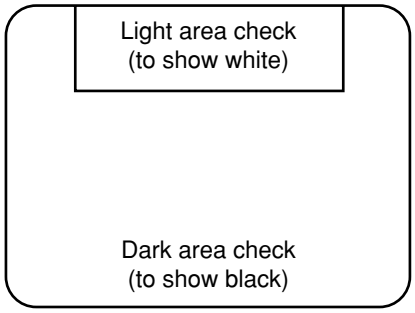
Refer to table-3 for data of design mode.
(See SETTING & ADJUSTING DATA on page 16)

3. ADJUSTING THE DATA

Pressing of VOLUME ▲ or ▼ button will change the value of data.

ELECTRICAL ADJUSTMENTS

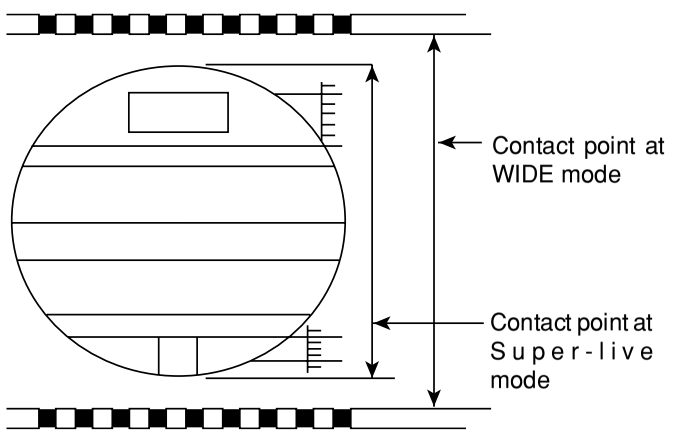
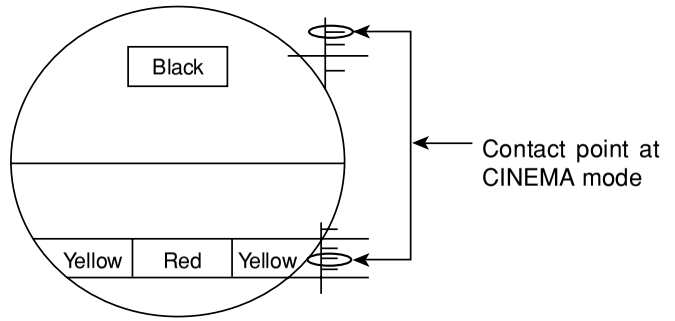
ITEM	ADJUSTMENT PROCEDURE
FOCUS VR ADJ	1. Enter the service mode, then select any register item. 2. Press the TV/VIDEO button on the Remote until the black cross-bar pattern appears on the screen. 3. Adjust the FOCUS control (on T461) for well defined scanning lines on the picture screen.
SUB-BRIGHTNESS (BRTC) Note: Constrict the picture height until the vertical retrace line appears adjusting the item HIT (HEIGHT).	1. Set CONTRAST to minimum, and BRIGHTNESS to center by adjusting user controls. 2. Set the TV in service mode to get Black cross-bar of inside pattern. 3. Select BRTC (brightness correction), and adjust the ◿ – /+ button to reduce the value so that white portion of inside pattern slightly light. 4. Adjust ◿ – /+ button to increase the data value of BRTC, and set it just before the difference between the belt of vertical retrace and the border of black portion of inside pattern is visible. After that, return vertical height and contrast.  Belt of vertical retrace
HORIZONTAL POSITION ADJUSTMENT (HPOS) VERTICAL POSITION ADJUSTMENT (VPOS)	1. Set the TV in service mode, and get black cross-bar signal with VIDEO button on remote hand unit. 2. Select either HPOS (Horizontal picture phase) or VPOS (Vertical picture phase) with CHANNEL ▲, ▼ buttons, and adjust horizontal or vertical picture position in the center of screen with VOLUME ◿ – /+ buttons. 
VERTICAL AMPLITUDE ADJUSTMENT (HIT)	1. Set the TV in service mode, and get black cross-hatch signal with VIDEO button on remote hand unit. 2. Select HIT (Vertical amplitude) with CHANNEL ▲, ▼ buttons, and adjust vertical amplitude with VOLUME ◿ – /+ buttons so that vertical amplitude lacks a little. 3. Adjust vertical amplitude with VOLUME ◿ – /+ buttons so that the first bar on cross-hatch signal touches edge of screen. The first ☞ 

ITEM	ADJUSTMENT PROCEDURE
WIDTH (WID)	1. Call up the adjustment mode display, then select the item **WID**. 2. Press the ◿ – /+ button to get the picture so the left and rightedges of raster begins to lack. 3. Press the ◿ – /+ button to advance the data by 7 steps. Note : Check the horizontal picture position is correct.
E-W PARABOLA (PARA)	1. Call up the adjustment mode display, then select the item **PARA**. 2. Press the ⊖ button on Remote until the cross-hatch pattern appears on the screen. 3. Press the ◿ – /+ button to make vertical lines straight as shown below. 
WHITE BALANCE ADJUSTMENT ● CUTOFF ADJUSTMENT (RCUT) (GCUT) (BCUT) ● DRIVE ADJUSTMENT (GDRV) (BDRV)	1. Set Contrast to 40, and brightness to +20 by picture control. 2. Receive the Black and White pattern. 3. Select RCUT, GCUT and BCUT with CHANNEL ▲, ▼ buttons, to set individual values to Initial reference data, and to set GDRV and BDRV to Initial reference data with VOLUME ◿ – /+ buttons (See page 18). 4. Press -/- - button on the remote control and rotate Screen VR to get one slight horizontal line on screen. Note: Every pressing of -/- - button provides Horizontal line picture and Normal picture alternately. 5. Press -/- - button to release horizontal line picture, and select the two other colors which did not light in the above step with CHANNEL ▲, ▼ buttons. Then tap VOLUME ◿ – /+ buttons so that three colors slightly light in the same level. ※ To correct white balance in light area, select GDRV and BDRV with CHANNEL ▲, ▼ buttons to adjust. ※ To correct white balance in dark area, perform fine adjustment of RCUT, GCUT and BCUT. 

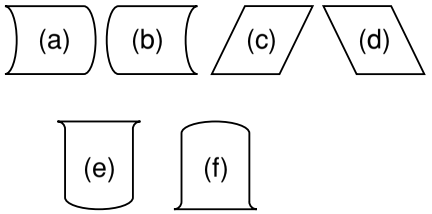
(Reference Factory Adjustments)

Items	Names	Settings (User control)	Input signals	Measuring points	Adjusting methods	Adjusting standards
[SCNT]	Sub-contrast	PICTURE MODE-1 Screen size: WIDE Audio system: I	Sub-bright signal (PAL-I Signal)	TP46B	① Adjust the amplitude from the pedestal level to the white peak.	2.4 ± 0.1 Vp-p
[BRTC]	Sub-bright Center	PICTURE MODE-1 Screen size: WIDE	Sub-bright Signal	Screen adjust-ment	① Adjust the number of collapsed black lines of the sub-bright signal. ② Adjust this after adjusting W/B, [SCNT].	4±1.5 pieces Screen adjustment
[COLP]	Sub-color center PAL	PICTURE MODE-1 Screen size: WIDE	Sub-bright Signal (PAL)	TP46B	① Adjust the amplitude of B-Y. (Apply Y mute at the time of adjustment)	1.2 ± 0.1 Vo-p
SCREEN VR [RCUT] [GCUT] [BCUT] [GDRV] [BDRV]	R Cutoff G Cutoff B Cutoff G Drive B Drive	PICTURE MODE-1 Screen size: WIDE [RCUT]: 40H [GCUT]: 40H [BCUT]: 40H [GDRV]: 35H [BDRV]: 35H		Screen adjustment	① Enter Horizontal Straight-line Mode. ② Gradually increase the screen VR until R, G, or B line starts to light up slightly. ③ Determine this location as the adjusting position of the screen VR. ④ Gradually raise the respective lines other than the line that glimmered in ② above and stop at the location where each of them glimmers. (Adjust so that it will become almost white) ⑤ Escape from horizontal straight-line mode. ⑥ Use the CA100 and adjust repeatedly so that both the dark and bright areas will come to correct values.	Bright part (103cd/m²) 8750K-0.002uv Dark part (17cd/m²) 8750K-0.002uv Screen judgment (CA100)
[SBY]	SECAM B-Y Black level		SECAM Color bar	TP01	① Vary [SBY] so that the level of black and white signal areas will be aligned with that of BLK.	0 ± 10 mV
[SRY]	SECAM R-Y Black level		SECAM Color bar	TP02	① Vary [SRY] so that the level of black and white signal areas will be aligned with that of H. BLK.	0 ± 10 mV
[COLS]	Sub-color Center SECAM	PICTURE MODE-1 Screen size: WIDE	SECAM Color bar	TP46B	① Adjust the amplitude of B-Y. (Apply Y mute at the time of adjustment)	1.6 ± 0.1 Vo-p (Pedestal to Peak)

1. Data adjustment

	Adjusting items	Adjusting methods	
Vertical	WIDE mode Vertical amplitude [HIT] Vertical position [VPS1]	PAL WG Philips Pattern, User Adjustment Standard Adjust the vertical amplitude by [HIT] so that the top-and-bottom flags will be hidden. PAL Philips Pattern, User Adjustment Standard Adjust the vertical position [VPS1] so that the vertical screen position will come to the center in Philips Pattern. (See the figure on the right)	
	Super-live mode Vertical amplitude [HIT]	PAL Philips Pattern, User Adjustment Standard Adjust the vertical amplitude position by [HIT] so that the top and bottom of the circle will contact the CPT mask in Philips Pattern. (See the figure on the right)	
	CINEMA mode Vertical amplitude [HIT]	Philips Pattern, User Adjustment Standard Adjust the vertical amplitude by [HIT] so that point shown in the lower right will contact the CRT mask. (See the figure on the right)	

3. Data Adjustment

	Adjustment items	Adjustment methods
Horizontal	WIDE mode Horizontal phase: [HPOS] Horizontal amplitude: [WID] Side DPC: [PARA] Trapezoidal distortion: [TRAP] Corner distortion: [CNR] Center distortion: [CPAR] Parallelogram distortion: [CSAW] DPCS letter distortion: [HSC]	Use PAL WG Philips Pattern and adjust the horizontal amplitude so that the mask will be adjusted to the frame of the left and right flag sections at WIDE mode. Use [WID]. Use PAL WG Philips Pattern and adjust by [PARA] and [TRAP] so that the side pin distortion and trapezoidal distortion will be optimized at WIDE mode. As for the horizontal screen position, use horizontal phase [HPOS] and adjust so that the position will come to the center. • **Note:** If the distortion adjustment by [PARA] and [TRAP] was insufficient, use the DATA of [CNR], [CPAR], [CSAW], and [HSC] for adjustment. ① When the distortion occurs as shown in Fig. (a), decrease [CPAR]. On the contrary, increase [CPAR] for the distortion of Fig. (b). ② When the distortion occurs as shown in Fig. (c), decrease [CSAW]. On the contrary, increase [CSAW] for the distortion of Fig. (d). ③ When the distortion occurs as shown in Fig. (e), decrease [HSC]. On the contrary, increase [HSC] for the distortion of Fig. (f). 
	Super-live mode Horizontal amplitude: [WID] Side DPC: [PARA] Trapezoidal distortion: [TRAP] Horizontal phase [HPOS] DPCS letter distortion: [HSC] Corner distortion: [CNR]	Use PAL Philips Pattern and adjust the frame of the left and right flag sections to the mask at Super-live mode. Adjust so that the side pin distortion and trapezoidal distortion will be optimized. If further adjustment is required, use horizontal phase [HPOS], corner distortion [CNR], and DPCS letter distortion [HSC] f
	CINEMA mode Horizontal amplitude: [WID] Side DPC: [PARA] Trapezoidal distortion: [TRAP] Horizontal phase: [HPOS] DPCS letter distortion: [HSC] Corner distortion: [CNR]	

CIRCUIT CHECK

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimum (zero beam current).
3. High voltage must be measured below (B) kV.

Refer to table-1 for high voltage (B).
(See SETTING & ADJUSTING DATA on page 16)

4. Vary the BRIGHTNESS control to both extremes to be sure the high voltage does not exceed the limit under any conditions.

CHAPTER 2 SPECIFIC INFORMATIONS

SETTING & ADJUSTING DATA

【 SAFETY INSTRUCTIONS 】

		32”	36"
HIGH VOLTAGE AT ZERO BEAM:	(A)	32.2 kV	32.4 kV
MAX HIGH VOLTAGE:	(B)	35.0 kV	35.0 kV
AV VOLTAGE	(C)	220~240 V	220~240 V

Table-1

【 SERVICE MODE 】

ADJUSTING ITEMS AND DATAS IN THE SERVICE MODE:

Item	Adjustment	Reference data
RCUT	R CUTOFF	40H
GCUT	G CUTOFF	40H
BCUT	B CUTOFF	40H
GDRV	R DRIVE	35H
BDRV	B DRIVE	35H
BRTC	SUB BRIGHT CEN	80H
COLP	SUB COLOR CEN PAL	19H
COLS	SUB COLOR CEN SECAM	19H
SCC	YOOUT LEVLE FOR FOR ATV	66H
SRY	SECAM R-Y	07H
SBY	SECAM B-Y	04H

Item	Adjustment	WIDE			SuperLive			CINEMA		
		Ref. Data	32"	36"	Ref. Data	32"	36"	Ref. Data	32"	36"
HPOS	H-POSITION	3BH	35H	3BH	3AH	36H	3AH	3BH	35H	3BH
HIT	PICTURE HEIGHT	29H	←	←	2FH	32H	2FH	46H	←	←
VLIN	V-LINEARITY	0FH	←	←	0EH	←	←	0FH	←	←
VPS2	V-SHIFT	40H	←	←	←	←	←	←	←	←
WID	WIDTH	22H	1CH	22H	2DH	2BH	2DH	26H	1CH	26H
PARA	E-W PARABOLA	1AH	12H	1AH	1EH	18H	1EH	2BH	22H	2BH
CNR	E-W CORNER	13H	11H	13H	←	15H	13H	←	15H	13H
TRAP	TRAPEZIUM	40H	4CH	40H	43H	4DH	43H	41H	4CH	41H
CPAR	CENT PARA	07H	09H	07H	←	09H	07H	06H	08H	06H
HSC	EW S CORRECTION	10H	←	←	←	←	←	←	←	←
VPS1	V-POSITION	7FH	←	←	7FH	←	←	7FH	←	←
CSAW	CENT SAW	08H	←	←	←	←	←	←	←	←

Table-2

【 DESIGN MODE 】

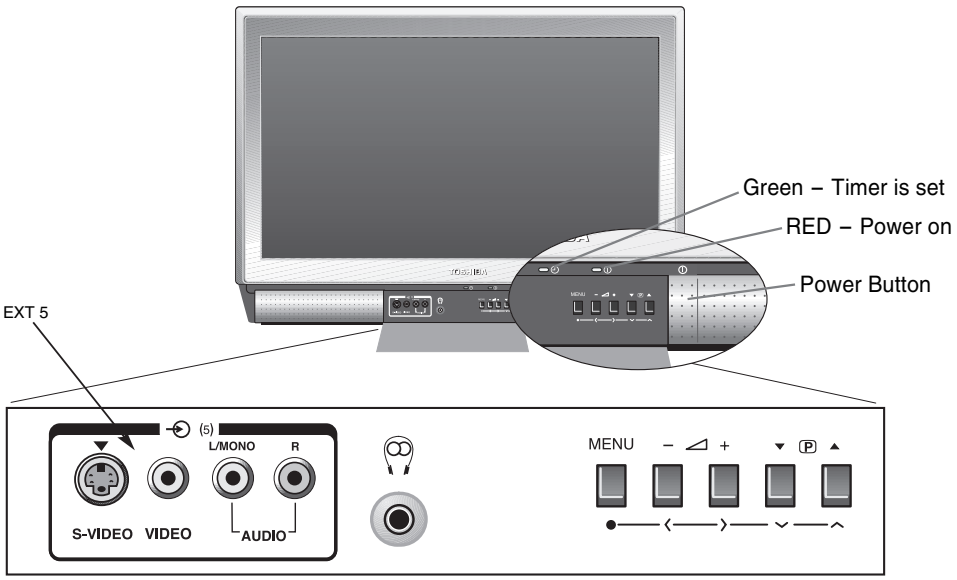
ADJUSTING ITEMS AND DATAS IN THE DESIGN MODE:

Item	Name of adjustment	Preset Data	32"	36"	Remarks
OPT0	OPTION 0	90H	←	←	
OPT1	OPTION 1	66H	←	←	
OPT2	OPTION 2	00H	←	←	
OPT3	OPTION 3	00H	←	←	
OPT4	OPTION 4	DFH	DBH	DFH	
OPT5	OPTION 5	06H	←	←	

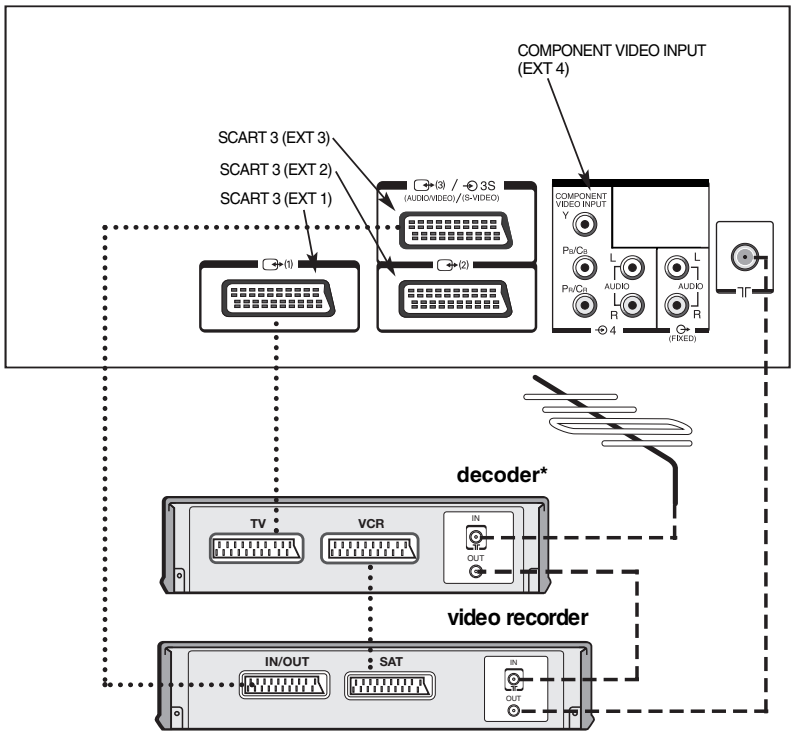
Table-3

LOCATION OF CONTROLS

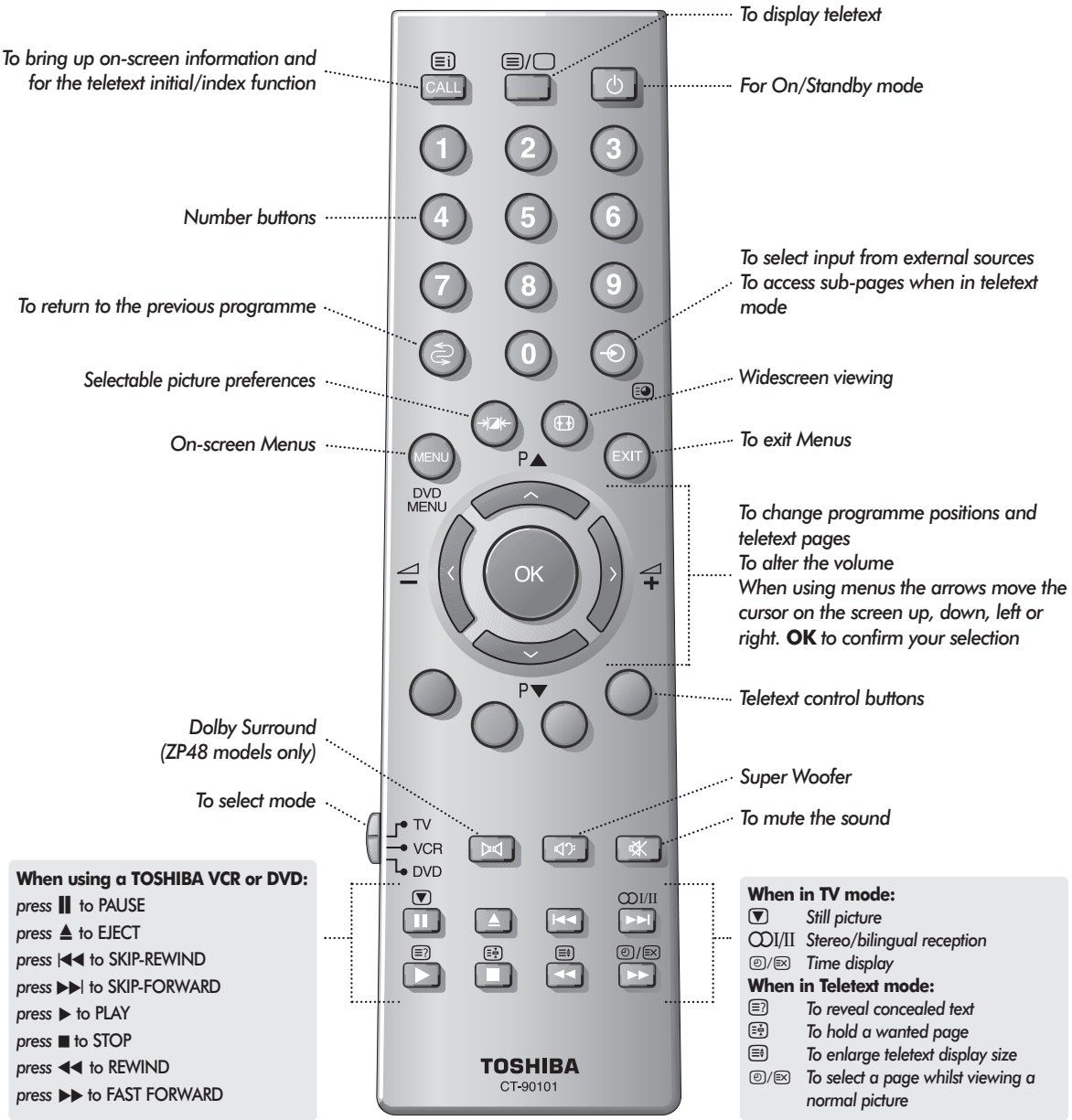
Front



Back



Remote Control


To display teletext
To bring up on-screen information and for the teletext initial/index function
For On/Standby mode
Number buttons
To select input from external sources
To access sub-pages when in teletext mode
To return to the previous programme
Selectable picture preferences
Widescreen viewing
On-screen Menus
To exit Menus
To change programme positions and teletext pages
To alter the volume
When using menus the arrows move the cursor on the screen up, down, left or right. OK to confirm your selection
Teletext control buttons
Dolby Surround (ZP48 models only)
Super Woofer
To select mode
To mute the sound
When using a TOSHIBA VCR or DVD:
press ⏸ to PAUSE
press ⏏ to EJECT
press ⏮ to SKIP-REWIND
press ⏭ to SKIP-FORWARD
press ▶ to PLAY
press ■ to STOP
press ◀◀ to REWIND
press ▶▶ to FAST FORWARD
When in TV mode:
Still picture
I/II Stereo/bilingual reception
Time display
When in Teletext mode:
To reveal concealed text
To hold a wanted page
To enlarge teletext display size
To select a page whilst viewing a normal picture
CALL
MENU
DVD MENU
EXIT
OK
TV
VCR
DVD
TOSHIBA
CT-90101

CHASSIS AND CABINET REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE. Do not degrade the safety of the receiver through improper servicing.

NOTICE:

- *The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.*
- *The PC board assembly with ∗ mark is no longer available after the end of the production.*

Model : 32ZP46P/36ZP46P

Capacitors	CD	: Ceramic Disk	PF	: Plastic Film	EL	: Electrolytic
Resistors	CF	: Carbon Film	CC	: Carbon Composition	MF	: Metal Film
	OMF	: Oxide Metal Film	VR	: Variable Resistor	FR	: Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.		Parts No.	Description
#1 : [32ZP46P]			
#2 : [36ZP46P]			
CAPACITORS			
C102		24762221	ELECTROLYTIC, 10V 220UF M
C105		24109102	CERAMIC CHIP, 50V B 1000PF K
C106		24797100	ELECTROLYTIC, 50V 10UF M
C108		24762221	ELECTROLYTIC, 10V 220UF M
C109		24109103	CERAMIC CHIP, 50V B 0.01UF K
C115		24109103	CERAMIC CHIP, 50V B 0.01UF K
C160		24503045	PLASTIC FILM, 63V 0.22UF J
C205		24797229	ELECTROLYTIC, 50V 2.2UF M
C206		24794100	ELECTROLYTIC, 16V 10UF M
C302		24214471	CERAMIC DISC, 500V B 470PF K
C303		24214471	CERAMIC DISC, 500V B 470PF K
C305		24795222	ELECTROLYTIC, 25V 2200UF M
C308		24766221	ELECTROLYTIC, 50V 220UF M
C309		24590102	PLASTIC FILM, 50V 1000PF J
C310		24795222	ELECTROLYTIC, 25V 2200UF M
C313		24082280	PLASTIC FILM, 100V 0.22UF J
C316		24795471	ELECTROLYTIC, 25V 470UF M
C317		24214821	CERAMIC DISC, 500V B 820PF K
C318		24794471	ELECTROLYTIC, 16V 470UF M
C320		24795471	ELECTROLYTIC, 25V 470UF M
C321		24503051	PLASTIC FILM, 63V 0.68UF J
C322		24617915	ELECTROLYTIC, 50V 1UF K 3A LI
C323		24503049	PLASTIC FILM, 63V 0.47UF J
C325		24590183	PLASTIC FILM, 50V 0.018UF J
C326		24797010	ELECTROLYTIC, 50V 1UF M
C327		24794471	ELECTROLYTIC, 16V 470UF M
C331		24503038	PLASTIC FILM, 63V 0.056UF J
C332		24212102	CERAMIC DISC, 50V B 1000PF K
C361	#1	24591222	PLASTIC FILM, 50V 2200PF J
	#2	24503045	PLASTIC FILM, 63V 0.22UF J
C366		24082275	PLASTIC FILM CQ922 M 100V 82000PF J
C370		24794100	ELECTROLYTIC, 16V 10UF M
C372		24797470	ELECTROLYTIC 04G, 50V 47UF M
C373		24797470	ELECTROLYTIC 04G, 50V 47UF M
C410		24092341	CERAMIC DISC, 2KV R 470PF K
C413		24214392	CERAMIC DISC, 500V B 3900PF K
C416		24676330	ELECTROLYTIC, 100V 33UF M 3A
C417		24214391	CERAMIC DISC, 500V B 390PF K
C419		24212102	CERAMIC DISC, 50V B 1000PF K
C420		24794101	ELECTROLYTIC, 16V 100UF M
C421		24232103	CERAMIC DISC, 50V F 0.01UF Z @U902
		24503041	PLASTIC FILM , 63V 0.1UF J @U903A

Location No.		Parts No.	Description
C423		24829563	PLASTIC FILM, 400V 0.056UF J
C430		24820103	PLASTIC FILM, 630V 0.01UF J
C431		24232103	CERAMIC DISC, 50V F 0.01UF Z
C432		24590103	PLASTIC FILM, 50V 0.01UF J
C441		24503291	PLASTIC FILM CF92 T 400V R62UF J
C442		24082637	PLASTIC FILM, 400V 0.1UF J
C443		24503190	PLASTIC FILM, 400V 0.12UF J
C444		24503196	PLASTIC FILM CF92 T 1800VH 5600PF H
C445		24829473	PLASTIC FILM, 400V 0.047UF J
C446		24679330	ELECTROLYTIC, 250V 33UF M 3A
C447	#1	24820243	PLASTIC FILM CQ92 T 630V 24000PF
	#2	24820273	PLASTIC FILM, 630V 27000PF J
C448		24073118	ELECTROLYTIC, 160V 33UF M
C449		24829333	PLASTIC FILM, 400V 0.033UF J
C451		24503047	PLASTIC FILM, 63V 0.33UF J
C460		24679220	ELECTROLYTIC, 250V 22UF M 3A
C461		24503195	PLASTIC FILM, 1800VH 5100PF H
C462		24666101	ELECTROLYTIC 04Q, 16V 100UF M 3A
C464		24503149	PLASTIC FILM, 250V 3.3UF
C465		24590183	PLASTIC FILM, 50V 0.018UF J
C466		24503261	PLASTIC FILM CF92 T 1250VH 6800PF H
C467		24503253	PLASTIC FILM, 1250VH 0.01UF H
C468		24503253	PLASTIC FILM, 1250VH 0.01UF H
C470		24794470	ELECTROLYTIC, 16V 47UF M
C471		24503046	PLASTIC FILM, 63V 0.27UF J
C472		24503049	PLASTIC FILM, 63V 0.47UF J
C473		24669010	ELECTROLYTIC, 50V 1UF M 3A
C475		24820822	PLASTIC FILM, 630V 8200PF J
C476		24794220	ELECTROLYTIC, 16V 22UF M
C478		24503038	PLASTIC FILM, 63V 0.056UF J
C481		24590103	PLASTIC FILM, 50V 0.01UF J
C482		24085988	ELECTROLYTIC, NONPOLAR, 50V 1.0UF M 7L @U902
		24212152	CERAMIC DISC, 50V B 1500PF K @U904
C489		24590393	PLASTIC FILM, 50V 0.039UF J
C495		24092343	CERAMIC DISC, 2KV 680PF K
C496		24092343	CERAMIC DISC, 2KV 680PF K
C498		24590821	PLASTIC FILM CQ922M 50V 820PF J
C501		24092730	CERAMIC CHIP, 16V B 0.1UF K
C502		24092730	CERAMIC CHIP, 16V B 0.1UF K
C503		24794470	ELECTROLYTIC, 16V 47UF M
C504		24109103	CERAMIC CHIP, 50V B 0.01UF K
C505		24794470	ELECTROLYTIC, 16V 47UF M
C506		24109103	CERAMIC CHIP, 50V B 0.01UF K
C507		24100104	CERAMIC CHIP, 25V F 0.1UF Z
C508		24100104	CERAMIC CHIP, 25V F 0.1UF Z
C509		24100104	CERAMIC CHIP, 25V F 0.1UF Z

Location No.	Parts No.	Description
C511	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C512	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C513	24109103	CERAMIC CHIP, 50V B 0.01UF K
C514	24763221	ELECTROLYTIC, 16V 220UF M
C516	24105110	CERAMIC CHIP, 50V CH 11PF J
C517	24206478	ELECTROLYTIC, 50V 0.47UF M 7L 3A
C519	24797479	ELECTROLYTIC, 50V 4.7UF M
C520	24503047	PLASTIC FILM, 63V 0.33UF J
C521	24092733	CERAMIC CHIP, 50V B 0.022UF K
C522	24109103	CERAMIC CHIP, 50V B 0.01UF K
C523	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C524	24109103	CERAMIC CHIP, 50V B 0.01UF K
C525	24503041	PLASTIC FILM , 63V 0.1UF J
C526	24109103	CERAMIC CHIP, 50V B 0.01UF K
C527	24797229	ELECTROLYTIC, 50V 2.2UF M
C530	24206010	ELECTROLYTIC, 50V 1.0UF M 7L 3A
C531	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C532	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C533	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C534	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C536	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C537	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C540	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C541	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C542	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C543	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C544	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C545	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C547	24109103	CERAMIC CHIP, 50V B 0.01UF K
C548	24763101	ELECTROLYTIC, 16V 100UF M
C563	24206010	ELECTROLYTIC, 50V 1.0UF M 7L 3A
C564	24797479	ELECTROLYTIC, 50V 4.7UF M
C565	24797478	ELECTROLYTIC, 50V 0.47UF M
C575	24092730	CERAMIC CHIP, 16V B 0.1UF K
C580	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C613	24666471	ELECTROLYTIC 04Q, 16V 470UF M 3A
C639	24793222	ELECTROLYTIC, 10V 2200UF M
C660	24797229	ELECTROLYTIC, 50V 2.2UF M
C661	24797478	ELECTROLYTIC, 50V 0.47UF M
C664	24794100	ELECTROLYTIC, 16V 10UF M
C665	24073082	ELECTROLYTIC, 50V 2.2UF M 3A
C666	24073082	ELECTROLYTIC, 50V 2.2UF M 3A
C669	24797330	ELECTROLYTIC, 50V 33UF M
C670	24591182	PLASTIC FILM, 50V 1800PF J @U902
	24797330	ELECTROLYTIC, 50V 33UF M @U903C
C671	24669010	ELECTROLYTIC, 50V 1UF M 3A
C672	24591182	PLASTIC FILM, 50V 1800PF J
C673	24669010	ELECTROLYTIC, 50V 1UF M 3A
C674	24669010	ELECTROLYTIC, 50V 1UF M 3A
C675	24667470	ELECTROLYTIC CE04Q, 25V 47UF M 3A
C676	24669479	ELECTROLYTIC, 50V 4.7UF M 3A
C677	24590471	PLASTIC FILM, 50V 470PF J
C678	24590471	PLASTIC FILM, 50V 470PF J
C679	24591473	PLASTIC FILM, 50V 0.047UF J
C680	24668102	ELECTROLYTIC, 35V 1000UF M 3A
C681	24668102	ELECTROLYTIC, 35V 1000UF M 3A
C682	24668102	ELECTROLYTIC, 35V 1000UF M 3A
C683	24668102	ELECTROLYTIC, 35V 1000UF M 3A
C684	24666470	ELECTORLYTIC, 16V 47UF M 3A
C685	24503042	PLASTIC FILM, 63V 0.12UF J
C686	24503042	PLASTIC FILM, 63V 0.12UF J
C687	24232103	CERAMIC DISC, 50V F 0.01UF Z
C688	24666220	ELECTROLYTIC, 16V 22UF M 3A
C689	24503042	PLASTIC FILM, 63V 0.12UF J
C696	24667470	ELECTROLYTIC CE04Q, 25V 47UF M 3A
C704	24590822	PLASTIC FILM, 50V 8200PF J
C705	24797229	ELECTROLYTIC, 50V 2.2UF M
C707	24794470	ELECTROLYTIC, 16V 47UF M
C712	24794470	ELECTROLYTIC, 16V 47UF M
C713	24790100	ELECTROLYTIC, 160V 10UF M
C715	24214472	CERAMIC DISC, 500V B 4700PF K
C717	24214472	CERAMIC DISC, 500V B 4700PF K
C718	24794470	ELECTROLYTIC, 16V 47UF M
C719	24435151	CERAMIC DISC, 500V SL 150PF
C720	24790100	ELECTROLYTIC, 160V 10UF M
C721	24794470	ELECTROLYTIC, 16V 47UF M

Location No.	Parts No.	Description
⚠ C801	24503506	PLASTIC FILM, AC275V 0.1UF K
⚠ C802	24503506	PLASTIC FILM, AC275V 0.1UF K
C803 #1	24503507	PLASTIC FILM, AC275V 0.22UF K
#2	24503002	PLASTIC FILM, AC275V 0.22UF M
C805	24092281	CERAMIC DISC, AC250V E 4700PF
C806	24092281	CERAMIC DISC, AC250V E 4700PF
C808	24668101	ELECTROLYTIC, 35V 100UF M 3A
C809	24503049	PLASTIC FILM, 63V 0.47UF J
C810	24086873	ELECTROLYTIC, 400V 330UF
⚠ C813	24092555	CERAMIC DISC, AC250V E 1000PF M
⚠ C814	24092555	CERAMIC DISC, AC250V E 1000PF M
C816	24669479	ELECTROLYTIC, 50V 4.7UF M 3A
C817	24092339	CERAMIC DISC, 2KV 330PF K
C818	24095931	PLASTIC FILM, 1250VH 2200PF J
C821	24214471	CERAMIC DISC, 500V B 470PF K
C822	24503049	PLASTIC FILM, 63V 0.47UF J
C823	24214471	CERAMIC DISC, 500V B 470PF K
C829	24591272	PLASTIC FILM, 50V 2700PF J
C832	24794470	ELECTROLYTIC, 16V 47UF M
C836	24794470	ELECTROLYTIC, 16V 47UF M
C838	24794470	ELECTROLYTIC, 16V 47UF M
C840	24667102	ELECTROLYTIC, 25V 1000UF M 3A
C842	24669100	ELECTROLYTIC, 50V 10UF M 3A
C872	24669221	ELECTROLYTIC, 50V 220UF M 3A
C884	24086953	ELECTROLYTIC, 160V 220UF M 3A
C885	24214471	CERAMIC DISC, 500V B 470PF K
C889	24669222	ELECTROLYTIC, 50V 2200UF M 3A
C891	24667472	ELECTROLYTIC, 25V 4700UF M 3A
C892	24667472	ELECTROLYTIC, 25V 4700UF M 3A
C893	24092337	CERAMIC DISC, 2KV 220PF K
C896	24214471	CERAMIC DISC, 500V B 470PF K
C898	24212102	CERAMIC DISC, 50V B 1000PF K
C899	24214471	CERAMIC DISC, 500V B 470PF K
C902	24092353	CERAMIC DISC, 2KV 4700PF K
C904	24436471	CERAMIC DISC, 50V SL 470PF J
C905	24436471	CERAMIC DISC, 50V SL 470PF J
C907	24436391	CERAMIC DISC, 50V SL 390PF J
C909	24679330	ELECTROLYTIC, 250V 33UF M 3A
C910	24797478	ELECTROLYTIC, 50V 0.47UF M
C911	24203100	ELECTORLYTIC, 16V 10UF M 7L 3A
C912 #1	24763102	ELECTROLYTIC, 16V 1000UF M
#2	24763222	ELECTROLYTIC, 04G 16V 2200UF M
C913	24794101	ELECTROLYTIC, 16V 100UF M
C914	24212103	CERAMIC DISC, 50V B 10000PF K
C915	24092398	CERAMIC DISC, 25V 0.1UF Z
C930	24214101	CERAMIC DISC, 500V B 100PF K
C931	24214101	CERAMIC DISC, 500V B 100PF K
C2102	24105560	CERAMIC CHIP, 50V CH 56PF J
C2103	24105560	CERAMIC CHIP, 50V CH 56PF J
C2104	24105560	CERAMIC CHIP, 50V CH 56PF J
C2110	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C4000	24590102	PLASTIC FILM, 50V 1000PF J
C4222	24092538	CERAMIC CHIP, 10V F 1UF Z
C4401	24763221	ELECTROLYTIC, 16V 220UF M
C4402	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4403	24797010	ELECTROLYTIC, 50V 1UF M
C4404	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4405	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C4406	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4407	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4408	24092538	CERAMIC CHIP, 10V F 1UF Z
C4409	24794331	ELECTROLYTIC, 16V 330UF M
C4410	24109103	CERAMIC CHIP, 50V B 0.01UF K
C4411	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C4412	24100104	CERAMIC CHIP, 25V F 0.1UF Z
C4490	24503190	PLASTIC FILM, 400V 0.12UF J
C4491	24503190	PLASTIC FILM, 400V 0.12UF J
C4601	24503040	PLASTIC FILM, 63V 0.082UF J
C4690	24503041	PLASTIC FILM , 63V 0.1UF J
C4699	24073058	ELECTROLYTIC, 25V 2200UF M 3A
C5020	24109103	CERAMIC CHIP, 50V B 0.01UF K
C5030	24763101	ELECTROLYTIC, 16V 100UF M
C5080	24206010	ELECTROLYTIC, 50V 1.0UF M 7L 3A
C5090	24763101	ELECTROLYTIC, 16V 100UF M
CA03	24105180	CERAMIC CHIP, 50V CH 18PF J
CA04	24105180	CERAMIC CHIP, 50V CH 18PF J

Location No.		Parts No.	Description
CA09		24105101	CERAMIC CHIP, 50V CH 100PF J
CA10		24105101	CERAMIC CHIP, 50V CH 100PF J
CA12		24105101	CERAMIC CHIP, 50V CH 100PF J
CA14	#2	24212103	CERAMIC DISC, 50V B 10000PF K
CA15		24105101	CERAMIC CHIP, 50V CH 100PF J
CA16		24105101	CERAMIC CHIP, 50V CH 100PF J
CA17		24105101	CERAMIC CHIP, 50V CH 100PF J
CA33		24793470	ELECTROLYTIC CE04G 10V 47UF M
CA42		24794101	ELECTROLYTIC, 16V 100UF M
CA43		24109103	CERAMIC CHIP, 50V B 0.01UF K
CA44		24109103	CERAMIC CHIP, 50V B 0.01UF K
CA45		24109103	CERAMIC CHIP, 50V B 0.01UF K
CA67		24100103	CERAMIC CHIP, 50V F 0.01UF Z
CA68		24794100	ELECTROLYTIC, 16V 10UF M
CA69		24100103	CERAMIC CHIP, 50V F 0.01UF Z
CA70		24794100	ELECTROLYTIC, 16V 10UF M
CA95	#2	24794100	ELECTROLYTIC, 16V 10UF M
CB04		24092538	CERAMIC CHIP, 10V F 1UF Z
CB05		24109222	CERAMIC CHIP, 50V B 2200PF K
CB06		24105561	CERAMIC CHIP, 50V CH 560PF J
CB07		24109332	CERAMIC CHIP, 50V B 3300PF K
CB21		24503041	PLASTIC FILM , 63V 0.1UF J
CB22		24203470	ELECTROLYTIC, 16V 47UF M 7L 3A
CB40		24092538	CERAMIC CHIP, 10V F 1UF Z
CB41		24109222	CERAMIC CHIP, 50V B 2200PF K
CB42		24105561	CERAMIC CHIP, 50V CH 560PF J
CB43		24109332	CERAMIC CHIP, 50V B 3300PF K
CB90		24100103	CERAMIC CHIP, 50V F 0.01UF Z
CC03		24212332	CERAMIC DISC, 50V B 3300PF K
CC04		24105220	CERAMIC CHIP, 50V CH 22PF J
CC05		24212332	CERAMIC DISC, 50V B 3300PF K
CC14		24212102	CERAMIC DISC, 50V B 1000PF K
CC15		24212102	CERAMIC DISC, 50V B 1000PF K @U903C
		24232103	CERAMIC DISC, 50V F 0.01UF Z @U904
CC16		24590103	PLASTIC FILM, 50V 0.01UF J
CC24		24109103	CERAMIC CHIP, 50V B 0.01UF K
CC25		24109103	CERAMIC CHIP, 50V B 0.01UF K
CC31		24109102	CERAMIC CHIP, 50V B 1000PF K
CC60		24109223	CERAMIC CHIP, 25V B 0.022UF K
CC61		24109223	CERAMIC CHIP, 25V B 0.022UF K
CC62		24109102	CERAMIC CHIP, 50V B 1000PF K
CC63		24109102	CERAMIC CHIP, 50V B 1000PF K
CC64		24109102	CERAMIC CHIP, 50V B 1000PF K
CC65		24109102	CERAMIC CHIP, 50V B 1000PF K
CC66		24109102	CERAMIC CHIP, 50V B 1000PF K
CC67		24109102	CERAMIC CHIP, 50V B 1000PF K
CC68		24109223	CERAMIC CHIP, 25V B 0.022UF K
CC69		24109102	CERAMIC CHIP, 50V B 1000PF K
CC70		24109102	CERAMIC CHIP, 50V B 1000PF K
CC71		24109223	CERAMIC CHIP, 25V B 0.022UF K
CC72		24109102	CERAMIC CHIP, 50V B 1000PF K
CC73		24109102	CERAMIC CHIP, 50V B 1000PF K
CC74		24109102	CERAMIC CHIP, 50V B 1000PF K
CC75		24109102	CERAMIC CHIP, 50V B 1000PF K
CC77		24109102	CERAMIC CHIP, 50V B 1000PF K
CC78		24109102	CERAMIC CHIP, 50V B 1000PF K
CC80		24436470	CERAMIC DISC, 50V SL 47PF J
CR01		24206010	ELECTROLYTIC, 50V 1.0UF M 7L 3A
CR02		24100103	CERAMIC CHIP, 50V F 0.01UF Z
CR07		24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR08		24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR09		24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR10		24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR11		24105470	CERAMIC CHIP, 50V CH 47PF J
CR12		24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR13		24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR14		24100104	CERAMIC CHIP, 25V F 0.1UF Z
CR15		24794470	ELECTROLYTIC, 16V 47UF M
CR16		24100104	CERAMIC CHIP, 25V F 0.1UF Z
CS01		24797229	ELECTROLYTIC, 50V 2.2UF M
CS02		24797229	ELECTROLYTIC, 50V 2.2UF M
CS03		24797229	ELECTROLYTIC, 50V 2.2UF M
CS04		24797229	ELECTROLYTIC, 50V 2.2UF M
CS05		24797229	ELECTROLYTIC, 50V 2.2UF M
CS06		24797229	ELECTROLYTIC, 50V 2.2UF M
CS07		24797229	ELECTROLYTIC, 50V 2.2UF M

Location No.	Parts No.	Description
CS08	24797229	ELECTROLYTIC, 50V 2.2UF M
CS09	24797229	ELECTROLYTIC, 50V 2.2UF M
CS10	24797229	ELECTROLYTIC, 50V 2.2UF M
CS11	24794100	ELECTROLYTIC, 16V 10UF M
CS12	24794100	ELECTROLYTIC, 16V 10UF M
CS13	24794100	ELECTROLYTIC, 16V 10UF M
CS14	24794100	ELECTROLYTIC, 16V 10UF M
CS18	24794100	ELECTROLYTIC, 16V 10UF M
CS19	24794100	ELECTROLYTIC, 16V 10UF M
CS20	24797478	ELECTROLYTIC, 50V 0.47UF M
CS23	24797478	ELECTROLYTIC, 50V 0.47UF M
CS24	24797229	ELECTROLYTIC, 50V 2.2UF M
CS25	24797229	ELECTROLYTIC, 50V 2.2UF M
CT01	24792221	ELECTROLYTIC CE04G 6.3V 220UF M
CT02	24109103	CERAMIC CHIP, 50V B 0.01UF K
CT03	24109103	CERAMIC CHIP, 50V B 0.01UF K
CT04	24793101	ELECTROLYTIC, 10V 100UF M
CT05	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT06	24793470	ELECTROLYTIC CE04G 10V 47UF M
CT07	24092538	CERAMIC CHIP, 10V F 1UF Z
CT08	24105560	CERAMIC CHIP, 50V CH 56PF J
CT09	24105560	CERAMIC CHIP, 50V CH 56PF J
CT10	24793470	ELECTROLYTIC CE04G 10V 47UF M
CT11	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT12	24793470	ELECTROLYTIC CE04G 10V 47UF M
CT13	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT14	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT17	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT19	24794100	ELECTROLYTIC, 16V 10UF M
CT20	24109103	CERAMIC CHIP, 50V B 0.01UF K
CT23	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CT99	24763102	ELECTROLYTIC, 16V 1000UF M
CV02	24092538	CERAMIC CHIP, 10V F 1UF Z
CV03	24092538	CERAMIC CHIP, 10V F 1UF Z
CV04	24092538	CERAMIC CHIP, 10V F 1UF Z
CV06	24092538	CERAMIC CHIP, 10V F 1UF Z
CV07	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV08	24203101	ELECTROLYTIC, 16V 100UF M 7L 3A
CV09	24092538	CERAMIC CHIP, 10V F 1UF Z
CV10	24794100	ELECTROLYTIC, 16V 10UF M
CV12	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV13	24794100	ELECTROLYTIC, 16V 10UF M
CV14	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV15	24092743	CERAMIC CHIP, 10V F 0.47UF Z
CV23	24203101	ELECTROLYTIC, 16V 100UF M 7L 3A
CV24	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV25	24794470	ELECTROLYTIC, 16V 47UF M
CV35	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV36	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV39	24794101	ELECTROLYTIC, 16V 100UF M
CV40	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV41	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV42	24092538	CERAMIC CHIP, 10V F 1UF Z
CV44	24092743	CERAMIC CHIP, 10V F 0.47UF Z
CV45	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV46	24794101	ELECTROLYTIC, 16V 100UF M
CV48	24503041	PLASTIC FILM , 63V 0.1UF J
CV65	24203101	ELECTROLYTIC, 16V 100UF M 7L 3A
CV66	24203101	ELECTROLYTIC, 16V 100UF M 7L 3A
CV70	24794100	ELECTROLYTIC, 16V 10UF M
CV71	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CV72	24092538	CERAMIC CHIP, 10V F 1UF Z
CV73	24092538	CERAMIC CHIP, 10V F 1UF Z
CV74	24092538	CERAMIC CHIP, 10V F 1UF Z
CV75	24092538	CERAMIC CHIP, 10V F 1UF Z
CV76	24092538	CERAMIC CHIP, 10V F 1UF Z
CV77	24092538	CERAMIC CHIP, 10V F 1UF Z
CZ01	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CZ02	24109103	CERAMIC CHIP, 50V B 0.01UF K
CZ03	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CZ04	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CZ07	24100104	CERAMIC CHIP, 25V F 0.1UF Z
CZ46	24109103	CERAMIC CHIP, 50V B 0.01UF K
CZ47	24794101	ELECTROLYTIC, 16V 100UF M
G484	24590152	PLASTIC FILM, 50V 1500PF J

Location No.		Parts No.	Description
RESISTORS			
R101		24553223	OXIDE METAL FILM, 1W 22K OHM J
R208		24366103	CARBON FILM, 1/6W 10K OHM J
R209		24366103	CARBON FILM, 1/6W 10K OHM J
R211		24366623	CARBON FILM, 1/6W 62K OHM J
R217		24366392	CARBON FILM, 1/6W 3.9K OHM J
R218		24366223	CARBON FILM, 1/6W 22K OHM J
R219		24366223	CARBON FILM, 1/6W 22K OHM J
R227	#1	24366303	CARBON FILM, 1/6W 30K OHM J
	#2	24366273	CARBON FILM, 1/6W 27K OHM J
R245		24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R271		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R272		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R303		24321109	OXIDE METAL FILM, 1/2W 1 OHM J
R305		24322109	OXIDE METAL FILM, 1W 1 OHM J
R307		24366101	CARBON FILM, 1/6W 100 OHM J
R315		24366332	CARBON FILM, 1/6W 3.3K OHM J
R318		24366101	CARBON FILM, 1/6W 100 OHM J
R319		24366101	CARBON FILM, 1/6W 100 OHM J
R320		24366274	CARBON FILM, 1/6W 270K OHM J
R322		24366102	CARBON FILM, 1/6W 1K OHM J
R326		24338109	OXIDE METAL FILM, 1W 1 OHM J
R327		24338109	OXIDE METAL FILM, 1W 1 OHM J
R329		24366102	CARBON FILM, 1/6W 1K OHM J
R330		24552103	OXIDE METAL FILM, 1/2W 10K OHM J
R331		24366104	CARBON FILM, 1/6W 100K OHM J
R332		24366334	CARBON FILM, 1/6W 330K OHM J
R333		24552103	OXIDE METAL FILM, 1/2W 10K OHM J
R334		24366823	CARBON FILM, 1/6W 82K OHM J
R335		24366153	CARBON FILM, 1/6W 15K OHM J
R336		24383821	OXIDE METAL FILM, 2W 820 OHM J
R339		24366274	CARBON FILM, 1/6W 270K OHM J
R340		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R342		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R343		24366103	CARBON FILM, 1/6W 10K OHM J
R344		24366823	CARBON FILM, 1/6W 82K OHM J
R370		24366822	CARBON FILM, 1/6W 8.2K OHM J
R371		24366103	CARBON FILM, 1/6W 10K OHM J
R372		24366220	CARBON FILM, 1/6W 22 OHM J
R375		24552150	OXIDE METAL FILM, 1/2W 15 OHM J
R399		24366224	CARBON FILM, 1/6W 220K OHM J
R400		24946561	CARBON COMPOSITION, 1/2W 560 OHM K
R405		24553682	OXIDE METAL FILM, 1W 6.8K OHM J
R411		24366180	CARBON FILM, 1/6W 18 OHM J
R412		24323228	OXIDE METAL FILM, 2W 0.22 OHM J
R415		24383271	OXIDE METAL FILM, 2W 270 OHM J
R416		24381563	OXIDE METAL FILM, 1/2W 56K OHM J
R417		24383680	OXIDE METAL FILM, 2W 68 OHM J
R423		24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R424		24366751	CARBON FILM, 1/6W 750 OHM J
R425		24552182	OXIDE METAL FILM, 1/2W 1.8K OHM J
R426		24366751	CARBON FILM, 1/6W 750 OHM J
R427		24366392	CARBON FILM, 1/6W 3.9K OHM J
R428		24366561	CARBON FILM, 1/6W 560 OHM J
R429		24553100	OXIDE METAL FILM, 1W 10 OHM J
R430	#1	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
	#2	24011303	CHIP, METAL FILM, 1/20W 30K OHM J
R431		24011272	CHIP, 1/20W 2.7K OHM J
R432		24011272	CHIP, 1/20W 2.7K OHM J
R433		24366681	CARBON FILM, 1/6W 680 OHM J
R434		24366472	CARBON FILM, 1/6W 4.7K OHM J
R435		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J @U902
		24366184	CARBON FILM, 1/6W 18OK OHM J @U904
R436	#1	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
	#2	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
R437		24011272	CHIP, 1/20W 2.7K OHM J
R439		24011333	CHIP, METAL FILM, 1/20W 33K OHM J
R441		24383561	OXIDE METAL FILM, 2W 560 OHM J
R442		24011333	CHIP, METAL FILM, 1/20W 33K OHM J @U902
		24553153	OXIDE METAL FILM, 1W 15K OHM J @U904
R443		24011563	CHIP, METAL FILM, 1/20W 56K OHM J
R444		24011563	CHIP, METAL FILM, 1/20W 56K OHM J
R445		24011563	CHIP, METAL FILM, 1/20W 56K OHM J @U902
		24321129	OXIDE METAL FILM, 1/2W 1.2 OHM J @U904
R452		24011822	CHIP, METAL FILM, 1/20W 8.2K OHM J
R460		24366103	CARBON FILM, 1/6W 10K OHM J

Location No.	Parts No.	Description
R461	24366182	CARBON FILM, 1/6W 1.8K OHM J
R462	24366473	CARBON FILM, 1/6W 47K OHM J
R463	24366473	CARBON FILM, 1/6W 47K OHM J
R464	24552331	OXIDE METAL FILM, 1/2W 330 OHM J
R465	24366242	CARBON FILM, 1/6W 2.4K OHM J
R466	24383220	OXIDE METAL FILM, 2W 22 OHM J
R467	24383220	OXIDE METAL FILM, 2W 22 OHM J
R468	24366471	CARBON FILM, 1/6W 470 OHM J
R469	24366823	CARBON FILM, 1/6W 82K OHM J
R470	24339568	OXIDE METAL FILM, 2W 0.56 OHM J
R471	24531271	FUSIBLE, 1/2W 270 OHM J
R472	24366101	CARBON FILM, 1/6W 100 OHM J
R473	24366183	CARBON FILM, 1/6W 18K OHM J
R474	24376393	CARBON FILM, 1/2W 39K OHM J
R476	24366471	CARBON FILM, 1/6W 470 OHM J
R477	24366102	CARBON FILM, 1/6W 1K OHM J
R478	24381333	OXIDE METAL FILM, 1/2W 33K OHM J
R479	24531680	FUSIBLE, 1/2W 68 OHM J
R480	24366103	CARBON FILM, 1/6W 10K OHM J
R481	24366123	CARBON FILM, 1/6W 12K OHM J
R482	24366183	CARBON FILM, 1/6W 18K OHM J
R483	24366223	CARBON FILM, 1/6W 22K OHM J
R484	24366103	CARBON FILM, 1/6W 10K OHM J
R485	24366103	CARBON FILM, 1/6W 10K OHM J
R486	24366103	CARBON FILM, 1/6W 10K OHM J
R487	24366474	CARBON FILM, 1/6W 470K OHM J
R488	24366154	CARBON FILM, 1/6W 150K OHM J
R489	24366104	CARBON FILM, 1/6W 100K OHM J
R491	24366101	CARBON FILM, 1/6W 100 OHM J
R492	24366472	CARBON FILM, 1/6W 4.7K OHM J
R495	24327224	METAL FILM, 1/4W 220K OHM F
R498	24366274	CARBON FILM, 1/6W 270K OHM J
R499	24366564	CARBON FILM, 1/6W 560K OHM J
R501	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R502	24011272	CHIP, 1/20W 2.7K OHM J
R504	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R505	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R506	24011273	CHIP, 1/20W 27K OHM J
R507	24011392	CHIP, 1/20W 3.9K OHM J
R508	24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
R509	24011153	CHIP, METAL FILM, 1/2OW 15K OHM J
R511	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R512	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R513	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R514	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R515	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R516	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R517	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R519	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R520	24366681	CARBON FILM, 1/6W 680 OHM J
R543	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
R548	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
R552	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R553	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
R554	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R555	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R561	24552181	OXIDE METAL FILM, 1/2W 180 OHM J
R569	24011823	CHIP, METAL FILM, 1/20W 82K OHM J
R609	24011563	CHIP, METAL FILM, 1/20W 56K OHM J
R610	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R611	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R612	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R613	24011224	CHIP, METAL FILM, 1/20W 220K OHM J
R640	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R643	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R661	24552221	OXIDE METAL FILM, 1/2W 220 OHM J
R662	24011104	CHIP, METAL FILM, 1/20W 100K OHM J @U902
	24552221	OXIDE METAL FILM, 1/2W 220 OHM J @U903C
R663	24011272	CHIP, 1/20W 2.7K OHM J
R664	24011272	CHIP, 1/20W 2.7K OHM J
R670	24011123	CHIP, METAL FILM, 1/20W 12K OHM J
R671	24011153	CHIP, METAL FILM, 1/2OW 15K OHM J
R672	24011123	CHIP, METAL FILM, 1/20W 12K OHM J
R673	24011153	CHIP, METAL FILM, 1/2OW 15K OHM J
R674	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
R676	24011223	CHIP, METAL FILM, 1/20W 22K OHM J

Location No.	Parts No.	Description
R677	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R682	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
R683	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
R684	24366229	CARBON FILM, 1/6W 2.2 OHM J
R685	24366229	CARBON FILM, 1/6W 2.2 OHM J
R686	24366229	CARBON FILM, 1/6W 2.2 OHM J
R688	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R702	24552221	OXIDE METAL FILM, 1/2W 220 OHM J
R712	24366101	CARBON FILM, 1/6W 100 OHM J
R715	24366223	CARBON FILM, 1/6W 22K OHM J
R716	24366273	CARBON FILM, 1/6W 27K OHM J
R717	24366183	CARBON FILM, 1/6W 18K OHM J
R718	24366681	CARBON FILM, 1/6W 680 OHM J
R722	24552471	OXIDE METAL FILM, 1/2W 470 OHM J
R723	24366101	CARBON FILM, 1/6W 100 OHM J
R724	24366121	CARBON FILM, 1/6W 120 OHM J
R725	24366821	CARBON FILM, 1/6W 820 OHM J
R730	24552100	OXIDE METAL FILM, 1/2W 10 OHM J
R731	24553331	OXIDE METAL FILM, 1W 330 OHM J
R732	24366220	CARBON FILM, 1/6W 22 OHM J
R733	24366683	CARBON FILM, 1/6W 68K OHM J
R734	24366220	CARBON FILM, 1/6W 22 OHM J
R735	24366683	CARBON FILM, 1/6W 68K OHM J
R736	24366470	CARBON FILM, 1/6W 47 OHM J
R737	24366681	CARBON FILM, 1/6W 680 OHM J
R738	24366102	CARBON FILM, 1/6W 1K OHM J
R739	24366681	CARBON FILM, 1/6W 680 OHM J
R740	24366470	CARBON FILM, 1/6W 47 OHM J
R741	24366229	CARBON FILM, 1/6W 2.2 OHM J
R742	24366229	CARBON FILM, 1/6W 2.2 OHM J
R743	24554121	OXIDE FILM 2W 120. J
R744	24366122	CARBON FILM, 1/6W 1.2K OHM J
R745	24366122	CARBON FILM, 1/6W 1.2K OHM J
⚠ R801	24004716	METAL GLAZE 1/2W 2R2M J
R803	24382683	OXIDE METAL FILM, 1W 68K OHM J
R805	24366221	CARBON FILM, 1/6W 220 OHM J
R806	24381473	OXIDE METAL FILM, 1/2W 47K OHM J
R807	24366154	CARBON FILM, 1/6W 150K OHM J
R808	24019484	THERMISTOR, PTC, AC265 4R5A
R810	24568159	CERAMIC COVERED, 7W 1.5 OHM J
R814	24366682	CARBON FILM, 1/6W 6.8K OHM J
R815	24552102	OXIDE METAL FILM, 1/2W 1K OHM J
R818	24019460	METAL PLATE, 2W 0.1 OHM J
R819	24381820	OXIDE METAL FILM, 1/2W 82 OHM J
R823	24552272	OXIDE METAL FILM, 1/2W 2.7K OHM J
R824	24569689	CERAMIC COVERED, 10W 6.8 OHM J
R827	24366681	CARBON FILM, 1/6W 680 OHM J
R828	24366821	CARBON FILM, 1/6W 820 OHM J
R829	24321228	OXIDE METAL FILM, 1/2W 0.22 OHM J
R831	24366471	CARBON FILM, 1/6W 470 OHM J
R834	24366471	CARBON FILM, 1/6W 470 OHM J
R841	24546479	FUSIBLE, 1/2W 4.7 OHM J
R842	24366152	CARBON FILM, 1/6W 1.5K OHM J
R843	24366331	CARBON FILM, 1/6W 330 OHM J
R850	24366103	CARBON FILM, 1/6W 10K OHM J
R851	24366102	CARBON FILM, 1/6W 1K OHM J
R852	24366225	CARBON FILM, 1/6W 2.2M OHM J
R875	24366392	CARBON FILM, 1/6W 3.9K OHM J
R876	24366103	CARBON FILM, 1/6W 10K OHM J
⚠ R899	24004718	METAL GLAZE 1/2W 8R2M J
R901	24376471	CARBON FILM, 1/2W 470 OHM J
R902	24376471	CARBON FILM, 1/2W 470 OHM J
R903	24376471	CARBON FILM, 1/2W 470 OHM J
R904	24366472	CARBON FILM, 1/6W 4.7K OHM J
R905	24366150	CARBON FILM, 1/6W 15 OHM J
R909	24366100	CARBON FILM, 1/6W 10 OHM J
R914	24366471	CARBON FILM, 1/6W 470 OHM J
R915	24366680	CARBON FILM, 1/6W 68 OHM J
R916	24366270	CARBON FILM, 1/6W 27 OHM J
R917	24366391	CARBON FILM, 1/6W 390 OHM J
R918	24366180	CARBON FILM, 1/6W 18 OHM J
R920	24000960	FUSIBLE Z 2W 2.7 J
R921	24366471	CARBON FILM, 1/6W 470 OHM J
R922	24366680	CARBON FILM, 1/6W 68 OHM J
R924	24366180	CARBON FILM, 1/6W 18 OHM J
R925	24366391	CARBON FILM, 1/6W 390 OHM J

Location No.	Parts No.	Description
R928	24366471	CARBON FILM, 1/6W 470 OHM J
R929	24366680	CARBON FILM, 1/6W 68 OHM J
R930	24366180	CARBON FILM, 1/6W 18 OHM J
R932	24366332	CARBON FILM, 1/6W 3.3K OHM J
R934	24366361	CARBON FILM, 1/6W 360 OHM J
R935	24366102	CARBON FILM, 1/6W 1K OHM J
R936	24545829	FUSIBLE, 1/4W 8.2 OHM J
R937	24366391	CARBON FILM, 1/6W 390 OHM J
R942	24366392	CARBON FILM, 1/6W 3.9K OHM J
R943	24366392	CARBON FILM, 1/6W 3.9K OHM J
R944	24366392	CARBON FILM, 1/6W 3.9K OHM J
R945	24366270	CARBON FILM, 1/6W 27 OHM J
R946	24366270	CARBON FILM, 1/6W 27 OHM J
R960	24383153	OXIDE METAL FILM, 2W 15K OHM J
R961	24383153	OXIDE METAL FILM, 2W 15K OHM J
R962	24383153	OXIDE METAL FILM, 2W 15K OHM J
R963	24383153	OXIDE METAL FILM, 2W 15K OHM J
R964	24383153	OXIDE METAL FILM, 2W 15K OHM J
R965	24383153	OXIDE METAL FILM, 2W 15K OHM J
R966	24383153	OXIDE METAL FILM, 2W 15K OHM J
R967	24383153	OXIDE METAL FILM, 2W 15K OHM J
R968	24383153	OXIDE METAL FILM, 2W 15K OHM J
R969	24366392	CARBON FILM, 1/6W 3.9K OHM J
R970	24366392	CARBON FILM, 1/6W 3.9K OHM J
R971	24366392	CARBON FILM, 1/6W 3.9K OHM J
R977	24366561	CARBON FILM, 1/6W 560 OHM J
R980	24366471	CARBON FILM, 1/6W 470 OHM J
R981	24366471	CARBON FILM, 1/6W 470 OHM J
R992	24366150	CARBON FILM, 1/6W 15 OHM J
R2020	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R2060	24366221	CARBON FILM, 1/6W 220 OHM J
R2105	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R2106	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R2107	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R2149	24871681	CHIP, 1/8W 680 OHM J
R2150	24871681	CHIP, 1/8W 680 OHM J
R2151	24871681	CHIP, 1/8W 680 OHM J
R2155	24871102	CHIP, METAL FILM, 1/8W 1K OHM J
R2156	24871102	CHIP, METAL FILM, 1/8W 1K OHM J
R2157	24871102	CHIP, METAL FILM, 1/8W 1K OHM J
R2158	24011563	CHIP, METAL FILM, 1/20W 56K OHM J
R2159	24011563	CHIP, METAL FILM, 1/20W 56K OHM J
R3407	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R4310	24366183	CARBON FILM, 1/6W 18K OHM J
R4401	24011302	CHIP, METAL FILM, 1/20W 3K OHM J
R4403	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4404	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
R4405	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4406	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
R4407	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
R4408	24011361	CHIP, 1/20W 360 OHM J
R4409	24552471	OXIDE METAL FILM, 1/2W 470 OHM J
R4410	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4411	24011101	CHIP, METAL FILM, 1/20W 100 OHM J @U902
	24366101	CARBON FILM, 1/6W 100 OHM J @U904
R4412	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4413	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4414	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4422	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4430	24011622	CHIP, METAL FILM, 1/20W 6.2K OHM J
R4466	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R4467	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
R4473	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4474	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
R4490	24382222	OXIDE METAL FILM, 1W 2.2K OHM J
R4491	24366392	CARBON FILM, 1/6W 3.9K OHM J
R4492	24366103	CARBON FILM, 1/6W 10K OHM J
R4493	24382104	OXIDE METAL FILM, 1W 100K OHM J
R4495	24366473	CARBON FILM, 1/6W 47K OHM J
R4601	24366101	CARBON FILM, 1/6W 100 OHM J
R4602	24366562	CARBON FILM, 1/6W 5.6K OHM J
R4690	24366103	CARBON FILM, 1/6W 10K OHM J
R4799	24366103	CARBON FILM, 1/6W 10K OHM J
R5020	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
R5030	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA02	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J

Location No.		Parts No.	Description
RA04		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA05		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA07		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA08		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA09		24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
RA10		24011682	CHIP, METAL FILM, 1/20W 6.8K OHM J
RA11		24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RA12		24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RA13		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA16		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA17		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA18		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA19		24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RA22		24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RA23		24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RA24		24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RA25		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA26		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA27		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA28		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA29		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA30		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA31		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA33		24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RA34	#2	24366103	CARBON FILM, 1/6W 10K OHM J
RA35		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA36		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA37		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA38		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA39		24011224	CHIP, METAL FILM, 1/20W 220K OHM J
RA40		24011391	CHIP, 1/20W 390 OHM J
RA43		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA48		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA50		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA60		24011470	CHIP, METAL FILM, 1/20W 47 OHM J
RA69		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA70		24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RA71		24011102	CHIP, METAL FILM, 1/20W 1K OHM J @U902
		24366683	CARBON FILM, 1/6W 68K OHM J @U903C
RA72		24366223	CARBON FILM, 1/6W 22K OHM J
RA73		24011470	CHIP, METAL FILM, 1/20W 47 OHM J @U902
		24366103	CARBON FILM, 1/6W 10K OHM J @U903C
RA75		24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RA76		24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RA78		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA80		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA81		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA82		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RA91	#2	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA92	#2	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA97	#2	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RA98	#2	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RA99		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB01		24366271	CARBON FILM, 1/6W 270 OHM J
RB03		24366271	CARBON FILM, 1/6W 270 OHM J
RB04		24011331	CHIP, METAL FILM, 1/20W 330 OHM J
RB05		24011105	CHIP, METAL FILM, 1/20W 1M OHM J
RB06		24011123	CHIP, METAL FILM, 1/20W 12K OHM J
RB07		24011392	CHIP, 1/20W 3.9K OHM J
RB08		24011392	CHIP, 1/20W 3.9K OHM J
RB09		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB10		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RB11		24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RB12		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RB13		24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J @U902
		24366223	CARBON FILM, 1/6W 22K OHM J @U903B
RB22		24366470	CARBON FILM, 1/6W 47 OHM J
RB32		24011105	CHIP, METAL FILM, 1/20W 1M OHM J
RB33		24011123	CHIP, METAL FILM, 1/20W 12K OHM J
RB34		24011392	CHIP, 1/20W 3.9K OHM J
RB35		24011392	CHIP, 1/20W 3.9K OHM J
RB43		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB44		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB45		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RB46		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RB49		24011331	CHIP, METAL FILM, 1/20W 330 OHM J

Location No.		Parts No.	Description
RB81		24011122	CHIP, METAL FILM, 1/20W 1.2K OHM J
RB82		24011123	CHIP, METAL FILM, 1/20W 12K OHM J
RB83		24011123	CHIP, METAL FILM, 1/20W 12K OHM J
RB90		24011392	CHIP, 1/20W 3.9K OHM J
RB91		24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RB92		24011271	CHIP, 1/20W 270 OHM J
RB93		24011271	CHIP, 1/20W 270 OHM J
RB94		24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RB95		24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RB96		24011273	CHIP, 1/20W 27K OHM J
RB97		24011273	CHIP, 1/20W 27K OHM J
RB98		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RC01		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RC02		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RC03		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RC04		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RC05		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RC06		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RC07		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RC08		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RC09		24000445	CHIP JUMPER, 1608TYPE
RC10		24000445	CHIP JUMPER, 1608TYPE
RC11		24366681	CARBON FILM, 1/6W 680 OHM J
RC12		24366681	CARBON FILM, 1/6W 680 OHM J
RD12		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RJ01	#2	24366103	CARBON FILM, 1/6W 10K OHM J
RJ02	#2	24366102	CARBON FILM, 1/6W 1K OHM J
RJ04	#2	24366102	CARBON FILM, 1/6W 1K OHM J
RJ05	#2	24323479	METAL FILM, 2W 4.7 OHM J
RJ06	#2	24366103	CARBON FILM, 1/6W 10K OHM J
RJ10	#2	24552560	OXIDE METAL FILM, 1/2W 56 OHM J
RR01		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR02		24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RR03		24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RR04		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RR05		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR06		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR07		24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RR08		24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RR09		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR11		24011821	CHIP, 1/20W 820 OHM J
RR12		24011821	CHIP, 1/20W 820 OHM J
RR13		24011821	CHIP, 1/20W 820 OHM J
RR14		24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RR15		24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RR16		24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RR17		24011392	CHIP, 1/20W 3.9K OHM J
RR18		24011392	CHIP, 1/20W 3.9K OHM J
RR19		24011392	CHIP, 1/20W 3.9K OHM J
RR20		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RR21		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR22		24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RR23		24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RR25		24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS01		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS02		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS03		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS04		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS05		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS06		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS07		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS08		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS09		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS10		24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS11		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS12		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS13		24011271	CHIP, 1/20W 270 OHM J
RS14		24011271	CHIP, 1/20W 270 OHM J
RS15		24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS16		24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS17		24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS18		24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS19		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS20		24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RS21		24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RS22		24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J

Location No.	Parts No.	Description
RS23	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS24	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS25	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS26	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS27	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS28	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS29	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RS30	24011681	CHIP, METAL FILM, 1/20W 680 OHM J
RS31	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS32	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS33	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS34	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS37	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS38	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS49	24011271	CHIP, 1/20W 270 OHM J
RS50	24011271	CHIP, 1/20W 270 OHM J
RS51	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS52	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS53	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS54	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RS55	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RS56	24011104	CHIP, METAL FILM, 1/20W 100K OHM J
RS58	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RS59	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RT01	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT02	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT03	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT04	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT05	24011100	CHIP, METAL FILM, 1/20W 10 OHM J
RT06	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RT07	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT08	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT09	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RT10	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RT11	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RT12	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RT13	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT14	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT15	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT16	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT18	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RT19	24000445	CHIP JUMPER, 1608TYPE
RT20	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT21	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RT22	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RT23	24000445	CHIP JUMPER, 1608TYPE
RT24	24000594	CHIP, 1/16W 12K OHM F
RT26	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RT27	24000594	CHIP, 1/16W 12K OHM F
RT28	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT29	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT30	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RT31	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RT32	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RT33	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RT34	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RT35	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RT37	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RT38	24011151	CHIP, METAL FILM, 1/20W 150 OHM J
RT39	24011561	CHIP, METAL FILM, 1/20W 560 OHM J
RT40	24011151	CHIP, METAL FILM, 1/20W 150 OHM J
RT42	24011470	CHIP, METAL FILM, 1/20W 47 OHM J
RT43	24011151	CHIP, METAL FILM, 1/20W 150 OHM J
RT44	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RV04	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV05	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RV07	24367103	CARBON FILM, 1/6W 10K OHM G
RV08	24367103	CARBON FILM, 1/6W 10K OHM G
RV09	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV10	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV16	24011333	CHIP, METAL FILM, 1/20W 33K OHM J
RV17	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RV18	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV19	24011471	CHIP, METAL FILM, 1/20W 470 OHM J
RV20	24367103	CARBON FILM, 1/6W 10K OHM G
RV21	24367392	CARBON FILM, 1/6W 3.9K OHM G

Location No.	Parts No.	Description
RV22	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RV23	24552101	OXIDE METAL FILM, 1/2W 100 OHM J
RV25	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV26	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV27	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV28	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RV29	24011562	CHIP, METAL FILM, 1/20W 5.6K OHM J
RV30	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV31	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV32	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV33	24367392	CARBON FILM, 1/6W 3.9K OHM G
RV34	24367392	CARBON FILM, 1/6W 3.9K OHM G
RV35	24872151	CHIP, 1/16W 150 OHM J
RV36	24872151	CHIP, 1/16W 150 OHM J
RV37	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV38	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV39	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV41	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV42	24011391	CHIP, 1/20W 390 OHM J
RV43	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV44	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV45	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV46	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV47	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RV48	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV60	24011222	CHIP, METAL FILM, 1/20W 2.2K OHM J
RV61	24552101	OXIDE METAL FILM, 1/2W 100 OHM J
RV62	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV63	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV64	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV65	24552101	OXIDE METAL FILM, 1/2W 100 OHM J
RV66	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV67	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RV68	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RV81	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV84	24366223	CARBON FILM, 1/6W 22K OHM J
RV85	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV86	24872750	CHIP, METAL FILM, 1/16W 75 OHM J
RV87	24872750	CHIP, METAL FILM, 1/16W 75 OHM J @U902
	24366750	CARBON FILM, 1/6W 75 OHM J @U903C
RV88	24872151	CHIP, 1/16W 150 OHM J @U902
	24366223	CARBON FILM, 1/6W 22K OHM J @U903C
RV89	24872151	CHIP, 1/16W 150 OHM J
RV90	24000445	CHIP JUMPER, 1608TYPE
RV91	24000445	CHIP JUMPER, 1608TYPE
RV92	24366683	CARBON FILM, 1/6W 68K OHM J
RV94	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV95	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV96	24011750	CHIP, METAL FILM, 1/20W 75 OHM J
RV99	24366750	CARBON FILM, 1/6W 75 OHM J
RV281	24367102	CARBON FILM, 1/6W 1K OHM G
RV331	24367102	CARBON FILM, 1/6W 1K OHM G
RV341	24367102	CARBON FILM, 1/6W 1K OHM G
RX01	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RX02	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
RZ01	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RZ02	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RZ03	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
RZ04	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RZ05	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RZ06	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RZ07	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RZ08	24011272	CHIP, 1/20W 2.7K OHM J
RZ09	24011392	CHIP, 1/20W 3.9K OHM J
RZ11	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RZ14	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RZ17	24011223	CHIP, METAL FILM, 1/20W 22K OHM J
RZ18	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RZ19	24011473	CHIP, METAL FILM, 1/20W 47K OHM J
RZ20	24011152	CHIP, METAL FILM, 1/20W 1.5K OHM J
RZ21	24011561	CHIP, METAL FILM, 1/20W 560 OHM J
RZ22	24011332	CHIP, METAL FILM, 1/20W 3.3K OHM J
RZ23	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
RZ24	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
RZ25	24000445	CHIP JUMPER, 1608TYPE
RZ26	24000445	CHIP JUMPER, 1608TYPE

Location No.	Parts No.	Description
RZ29	24011102	CHIP, METAL FILM, 1/20W 1K OHM J
G299	24366103	CARBON FILM, 1/6W 10K OHM J
G409	24946223	CARBON COMPOSITION GF 1/2W 22K K
G601	24000445	CHIP JUMPER, 1608TYPE
G602	24000445	CHIP JUMPER, 1608TYPE
G603	24000445	CHIP JUMPER, 1608TYPE
G604	24000445	CHIP JUMPER, 1608TYPE
G675	24011392	CHIP, 1/20W 3.9K OHM J
GA76	24366103	CARBON FILM, 1/6W 10K OHM J
GC01	24000445	CHIP JUMPER, 1608TYPE
GC02	24000445	CHIP JUMPER, 1608TYPE
GC03	24000445	CHIP JUMPER, 1608TYPE
GC04	24000445	CHIP JUMPER, 1608TYPE
GC20	24000445	CHIP JUMPER, 1608TYPE
GJ03	24000445	CHIP JUMPER, 1608TYPE
GJ05	24000445	CHIP JUMPER, 1608TYPE
GJ08	24000445	CHIP JUMPER, 1608TYPE
GJ11	24000445	CHIP JUMPER, 1608TYPE
GJ23	24000445	CHIP JUMPER, 1608TYPE
GJ24	24000445	CHIP JUMPER, 1608TYPE
GJ29	24000445	CHIP JUMPER, 1608TYPE
GJ30	24000445	CHIP JUMPER, 1608TYPE
GJ44	24000445	CHIP JUMPER, 1608TYPE
GJ48	24000445	CHIP JUMPER, 1608TYPE
GJ49	24000445	CHIP JUMPER, 1608TYPE
GJ50	24000445	CHIP JUMPER, 1608TYPE
GJ51	24000445	CHIP JUMPER, 1608TYPE
GJ75	24000445	CHIP JUMPER, 1608TYPE
GJ76	24000445	CHIP JUMPER, 1608TYPE
GJ77	24000445	CHIP JUMPER, 1608TYPE
GJ78	24000445	CHIP JUMPER, 1608TYPE
GJ99	24000445	CHIP JUMPER, 1608TYPE
GJ601	24000445	CHIP JUMPER, 1608TYPE
GJ602	24000445	CHIP JUMPER, 1608TYPE
GJ603	24000445	CHIP JUMPER, 1608TYPE
GT03	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
GT04	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
GT05	24011472	CHIP, METAL FILM, 1/20W 4.7K OHM J
GT07	24000445	CHIP JUMPER, 1608TYPE
GT09	24011103	CHIP, METAL FILM, 1/20W 10K OHM J
GV03	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
GV04	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
GV06	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
GV08	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
GV09	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
GV35	24011101	CHIP, METAL FILM, 1/20W 100 OHM J
GV42	24011331	CHIP, METAL FILM, 1/20W 330 OHM J
COILS & TRANSFORMERS		
L101	23221803	COIL, CHOKE, TLN3040D
L301	23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L302	23289846	COIL, PEAKING, TRF4101AT
L400	23289918	COIL, PEAKING, TRF4100AU
L410	23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L442	23248216	COIL, CHOKE, TLN3459AH
L443	23233110	COIL, LIN 22X40H 7A 12.5MMH TLN2227AH
L449	23248282	COIL, CHOKE, TLN3458AH
L461	23248248	COIL, CHOKE, TLN3500AH
L463	23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L464	23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L470	23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L491	23248191	COIL, CHOKE, TLN3351AD
L501	23289470	COIL, PEAKING, TRF4470AF
L503	23289470	COIL, PEAKING, TRF4470AF
L504	23238714	COIL, PEAKING, TRF4100AJ
L505	23289840	COIL, PEAKING, TRF4100AT
L510	23103852	COIL, FILTER, TEM2028AH
L511	23103845	COIL, TEM2030AY
L512	23103845	COIL, TEM2030AY
L514	23103852	COIL, FILTER, TEM2028AH
L515	23103845	COIL, TEM2030AY
L516	23103845	COIL, TEM2030AY
L605	23248288	COIL, CHOKE, TLN3299GH
L701	23289840	COIL, PEAKING, TRF4100AT
L702	23261974	COIL, FERRITE BEAD, HC5-035
L704	23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO

Location No.		Parts No.	Description
L705		23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L801		23217681	TRANSFORMER, CHOKE 40MH1.5A TPW2063AL
L805		23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L811		23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L824		23248289	COIL, CHOKE, TLN3312GH
L876		23289840	COIL, PEAKING, TRF4100AT
L883		23221111	COIL, CHOKE, TRF9253GH
L885		23248288	COIL, CHOKE, TLN3299GH
L886		23103248	FERRITE CHOKE, TEM2014AA
L889		23248289	COIL, CHOKE, TLN3312GH
L891		23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L892		23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
L893		23248289	COIL, CHOKE, TLN3312GH
L894		23289840	COIL, PEAKING, TRF4100AT
L895		23248289	COIL, CHOKE, TLN3312GH
L897		23248289	COIL, CHOKE, TLN3312GH
⚠ L901	#1	23200648	COIL, DG0.32CU 83T-2LOOP(PARA) TSB-2427AL
⚠	#2	23200650	COIL, DG0.40CU115T-2LOOP(PARA) TSB-2428AL
L902		23238508	COIL, PEAKING, TRF4121AJ
L903		23238703	COIL, PEAKING, TRF4820AJ
L904		23238703	COIL, PEAKING, TRF4820AJ
L905		23289841	COIL, PEAKING, TRF4150AT
L906		23289841	COIL, PEAKING, TRF4150AT
L907		23289841	COIL, PEAKING, TRF4150AT
L908		23289840	COIL, PEAKING, TRF4100AT
L911		23289846	COIL, PEAKING, TRF4101AT
L4000		23289918	COIL, PEAKING, TRF4100AU
L4401		23289101	COIL, PEAKING, TRF4101AF
LA01		23289840	COIL, PEAKING, TRF4100AT
LC01		23103828	INDUCTOR, BEAD, TEM2121M
LC02		23103828	INDUCTOR, BEAD, TEM2121M
LC03		23103828	INDUCTOR, BEAD, TEM2121M
LC04		23103828	INDUCTOR, BEAD, TEM2121M
LC05		23103828	INDUCTOR, BEAD, TEM2121M
LC06		23103828	INDUCTOR, BEAD, TEM2121M
LC07		23238562	COIL, PEAKING, TRF4109AJ
LC08		23238562	COIL, PEAKING, TRF4109AJ
LC09		23103828	INDUCTOR, BEAD, TEM2121M
LC10		23103828	INDUCTOR, BEAD, TEM2121M
LC15		23103825	INDUCTOR, BEAD, TEM2118M
LC16		23103825	INDUCTOR, BEAD, TEM2118M
LC17		23103825	INDUCTOR, BEAD, TEM2118M
LC18		23103825	INDUCTOR, BEAD, TEM2118M
LC43		23103828	INDUCTOR, BEAD, TEM2121M
LC45		23238562	COIL, PEAKING, TRF4109AJ
LG102		23103828	INDUCTOR, BEAD, TEM2121M
LG103		23103828	INDUCTOR, BEAD, TEM2121M
LJ901	#2	23200547	COIL, CORRECT COIL,0.4CU-60T TSB-2418AH
LR01		23289109	COIL, PEAKING, TRF41R0AF
LR02		23289109	COIL, PEAKING, TRF41R0AF
LT01		23103828	INDUCTOR, BEAD, TEM2121M
LT02		23103828	INDUCTOR, BEAD, TEM2121M
LT03		23103828	INDUCTOR, BEAD, TEM2121M
LT04		23103828	INDUCTOR, BEAD, TEM2121M
LT05		23103828	INDUCTOR, BEAD, TEM2121M
LT07		23103828	INDUCTOR, BEAD, TEM2121M
LT08		23103828	INDUCTOR, BEAD, TEM2121M
LT09		23103828	INDUCTOR, BEAD, TEM2121M
LT11		23103828	INDUCTOR, BEAD, TEM2121M
LT12		23103828	INDUCTOR, BEAD, TEM2121M
LV09		23289840	COIL, PEAKING, TRF4100AT
LV10		23289840	COIL, PEAKING, TRF4100AT
LV42		23289840	COIL, PEAKING, TRF4100AT
LV43		23289840	COIL, PEAKING, TRF4100AT
LV44		23289840	COIL, PEAKING, TRF4100AT
LV49		23103852	COIL, FILTER, TEM2028AH
LZ01		23289840	COIL, PEAKING, TRF4100AT
LZ02		23289840	COIL, PEAKING, TRF4100AT
LZ03		23289840	COIL, PEAKING, TRF4100AT
LZ04		23103827	INDUCTOR, BEAD, TEM2120M
LZ05		23103827	INDUCTOR, BEAD, TEM2120M
⚠ T400		23224386	TRANSFORMER, FOCUS, TLN2220AH
T401		23224384	TRANSFORMER, DRIVE, TLN1080AL
⚠ T461	#1	23236852	TRANSFORMER, FLY-BACK TFB4188BS
⚠	#2	23236841	TRANSFORMER, FLY-BACK TFB4218AD
T461A	#1	23192964	ANODE CAP ASSY, TCC5606CT

Location No.		Parts No.	Description
	#2	23192957	ANODE CAP ASSY, TCC5602AT
T461B		23509162	CABLE ASSY, CABLE FOCUS
T461C		23509372	CABLE ASSY, SCREEN
T461D		23509161	CABLE ASSY, CABLE FOCUS
T801		23211779	COIL, LINE FILTER 37X44H 16MH TRF3231AR
T802		23211779	COIL, LINE FILTER 37X44H 16MH TRF3231AR
T840		23217616	TRANSFORMER, POWER EI28 7V195V TPW1575AT
⚠ T862		23217562	TRANSFORMER, CONVERTER TPW3501AS
TPP2		23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
G401		23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
G404		23103249	CORE, FERRITE BEAD 3.5X4.5, TEM2011AO
G828		23103145	FERRITE CHOKE, TEM2011AA
GA02		23103828	INDUCTOR, BEAD, TEM2121M
GA10		23103828	INDUCTOR, BEAD, TEM2121M
GA37		23103828	INDUCTOR, BEAD, TEM2121M
GA38		23103828	INDUCTOR, BEAD, TEM2121M
GA39		23103828	INDUCTOR, BEAD, TEM2121M
GA40		23103828	INDUCTOR, BEAD, TEM2121M
GA41		23103828	INDUCTOR, BEAD, TEM2121M
SEMICONDUCTORS			
Q200		23114756	TRANSISTOR, 2SC2482
Q201		23205085	TRANSISTOR, 2SC5343-YL
Q274		23205006	TRANSISTOR, KTC4075Y
Q301		23319787	IC, LA7833S
Q302		23000711	IC, TA1317AN
Q303		23205081	TRANSISTOR, 2SA1980-Y
Q340		70114396	TRANSISTOR, 2SC3326B
Q341		23205085	TRANSISTOR, 2SC5343-YL
Q370		23114462	TRANSISTOR, RN1202
Q371		23114462	TRANSISTOR, RN1202
Q402		23114577	TRANSISTOR, 2SC22350 (FA-1
Q404		23205149	TRANSISTOR, 2SC5859(FA)
Q418		23205160	TRANSISTOR, NPN VCBO=100V KTD2092
Q420		23205160	TRANSISTOR, NPN VCBO=100V KTD2092
Q421		23205085	TRANSISTOR, 2SC5343-YL
Q422		70114396	TRANSISTOR, 2SC3326B
Q423		70114396	TRANSISTOR, 2SC3326B
Q424		70114396	TRANSISTOR, 2SC3326B
Q430		23205160	TRANSISTOR, NPN VCBO=100V KTD2092
Q451		70114396	TRANSISTOR, 2SC3326B
Q460		23205031	TRANSISTOR, FET, 2SK2920
Q461		23205085	TRANSISTOR, 2SC5343-YL
Q470		23114541	TRANSISTOR, 2SA1320 @U903A
		23205085	TRANSISTOR, 2SC5343-YL @U904
Q471		23205085	TRANSISTOR, 2SC5343-YL
Q472		23205085	TRANSISTOR, 2SC5343-YL
Q473		23205081	TRANSISTOR, 2SA1980-Y
Q499		23205081	TRANSISTOR, 2SA1980-Y
Q501		23009178	IC, TB1274AF(J,FP)
Q504		23205005	TRANSISTOR, KTA2014Y
Q505		23205005	TRANSISTOR, KTA2014Y
Q506		23205085	TRANSISTOR, 2SC5343-YL
Q507		23114501	TRANSISTOR, RN1402
Q510		23009369	IC, TA1360AFG
Q608		23314994	TRANSISTOR, 2SA1576A106
Q612		23314994	TRANSISTOR, 2SA1576A106
Q670		23906523	IC, TA8256BH
Q671		70114396	TRANSISTOR, 2SC3326B
Q672		70114396	TRANSISTOR, 2SC3326B
Q673		70114396	TRANSISTOR, 2SC3326B
Q688		23114499	TRANSISTOR, RN1404
Q705		23205085	TRANSISTOR, 2SC5343-YL
Q706		23205085	TRANSISTOR, 2SC5343-YL
Q707		23114437	TRANSISTOR, 2SC752GTM-Y
Q709		23205085	TRANSISTOR, 2SC5343-YL
Q710		23205081	TRANSISTOR, 2SA1980-Y
Q711		23205269	TRANSISTOR, VCBO-160V IC-1.5A 2SA2005
Q712		23205270	TRANSISTOR, VCBO 160V 1.5A 2SC5511
Q719		23205085	TRANSISTOR, 2SC5343-YL
Q801		23135037	IC, STR-F6268S
Q805		23205085	TRANSISTOR, 2SC5343-YL
Q807		23205085	TRANSISTOR, 2SC5343-YL
⚠ Q826		23009270	IC, PHOTO COUPLER, PS2581L1(D)
Q827		23000352	IC, SE125N, LF4
Q831		23314141	TRANSISTOR, 2SC3852

Location No.		Parts No.	Description
Q833		23314141	TRANSISTOR, 2SC3852
Q840		23314141	TRANSISTOR, 2SC3852
Q901		23314780	TRANSISTOR, 2SC4544
Q902		23314965	TRANSISTOR, KTC3198 Y
Q903		23314780	TRANSISTOR, 2SC4544
Q904		23314965	TRANSISTOR, KTC3198 Y
Q905		23314780	TRANSISTOR, 2SC4544
Q906		23314965	TRANSISTOR, KTC3198 Y
Q907		23114422	TRANSISTOR, 2SA562TM-Y
Q908		23114429	TRANSISTOR, 2SC2120-Y
Q910		23205085	TRANSISTOR, 2SC5343-YL
Q2104		23205081	TRANSISTOR, 2SA1980-Y
Q2105		23205081	TRANSISTOR, 2SA1980-Y
Q2106		23205081	TRANSISTOR, 2SA1980-Y
Q2107		23205005	TRANSISTOR, KTA2014Y
Q2108		23205005	TRANSISTOR, KTA2014Y
Q2109		23205005	TRANSISTOR, KTA2014Y
Q4200		23000370	IC, TA1318N
Q4465		23205005	TRANSISTOR, KTA2014Y
Q4490		23118952	IC, PHOTO COUPLER, TLP521-1 (FA)
Q4491		23314917	TRANSISTOR, 2SK2003-01MR
Q4493		23205085	TRANSISTOR, 2SC5343-YL
QA01		23085172	IC, 8BIT MCU 120K 64PIN CXP750010-326S
QA02		23009649	IC, AT24C64A-10PI
QA05		23906367	IC, PST9146NL
QA13		23314994	TRANSISTOR, 2SA1576A106
QA14	#2	23205081	TRANSISTOR, 2SA1980-Y
QA61		23009332	IC, AT24C256-2.7
QB03		23205081	TRANSISTOR, 2SA1980-Y
QB04		23205005	TRANSISTOR, KTA2014Y
QB05		23205006	TRANSISTOR, KTC4075Y
QB06		23205005	TRANSISTOR, KTA2014Y
QB07		23205005	TRANSISTOR, KTA2014Y
QB42		23205005	TRANSISTOR, KTA2014Y
QB43		23205006	TRANSISTOR, KTC4075Y
QB81		70114396	TRANSISTOR, 2SC3326B
QB82		70114396	TRANSISTOR, 2SC3326B
QB83		23314994	TRANSISTOR, 2SA1576A106
QB92		23314993	TRANSISTOR, 2SC4081 Q
QB93		23314994	TRANSISTOR, 2SA1576A106
QB94		23314994	TRANSISTOR, 2SA1576A106
QB95		23314994	TRANSISTOR, 2SA1576A106
QB96		23314994	TRANSISTOR, 2SA1576A106
QJ02	#2	23314965	TRANSISTOR, KTC3198 Y
QJ03	#2	23314912	TRANSISTOR, 2SC4793
QJ04	#2	23205085	TRANSISTOR, 2SC5343-YL
QR01		23009037	IC, MB90096P-G-23
QR11		23314994	TRANSISTOR, 2SA1576A106
QS01		70114396	TRANSISTOR, 2SC3326B
QS02		70114396	TRANSISTOR, 2SC3326B
QS03		23314993	TRANSISTOR, 2SC4081 Q
QS04		23314993	TRANSISTOR, 2SC4081 Q
QS05		70114396	TRANSISTOR, 2SC3326B
QS06		70114396	TRANSISTOR, 2SC3326B
QS07		70114396	TRANSISTOR, 2SC3326B
QS08		70114396	TRANSISTOR, 2SC3326B
QS09		23114493	TRANSISTOR, RN2404
QS10		23114493	TRANSISTOR, RN2404
QT01		23009169	IC, SAA5665HL/M1/0606
QT02		23314993	TRANSISTOR, 2SC4081 Q
QT03		70114402	TRANSISTOR, 2SC3437-Y
QT05		23314993	TRANSISTOR, 2SC4081 Q
QT06		23000283	IC, R1121N
QT07		23009815	IC, CY7C1019CV33-12ZCT
QT08		23314993	TRANSISTOR, 2SC4081 Q
QT10		23314993	TRANSISTOR, 2SC4081 Q
QT11		23009114	IC, BD4746G
QT12		23314994	TRANSISTOR, 2SA1576A106
QT13		23314994	TRANSISTOR, 2SA1576A106
QT14		23314994	TRANSISTOR, 2SA1576A106
QT15		23314994	TRANSISTOR, 2SA1576A106
QV01		23906887	IC, CXA2069Q
QV02		23205006	TRANSISTOR, KTC4075Y
QV03		23205006	TRANSISTOR, KTC4075Y
QV04		23205006	TRANSISTOR, KTC4075Y
QV06		23205005	TRANSISTOR, KTA2014Y

Location No.	Parts No.	Description
QV07	23205006	TRANSISTOR, KTC4075Y
QV08	23205005	TRANSISTOR, KTA2014Y
QV09	23205085	TRANSISTOR, 2SC5343-YL
QV12	23205085	TRANSISTOR, 2SC5343-YL
QV14	23205085	TRANSISTOR, 2SC5343-YL
QV15	23205006	TRANSISTOR, KTC4075Y
QV16	70128711	IC, BA7603F
QV17	23318981	IC, MC14053BF
QX01	70114396	TRANSISTOR, 2SC3326B
QZ01	23009303	IC, CMOS MULTI COMB SOP16 TDA9181T/N1,118
QZ02	23205006	TRANSISTOR, KTC4075Y
QZ03	23205005	TRANSISTOR, KTA2014Y
QZ04	23205005	TRANSISTOR, KTA2014Y
QZ05	23205005	TRANSISTOR, KTA2014Y
QZ06	23205005	TRANSISTOR, KTA2014Y
QZ07	23205006	TRANSISTOR, KTC4075Y
QZ09	23205006	TRANSISTOR, KTC4075Y
QZ10	23205005	TRANSISTOR, KTA2014Y
QZ11	23205006	TRANSISTOR, KTC4075Y
QZ12	23205005	TRANSISTOR, KTA2014Y
D101	23118607	DIODE, ZENER, RD33ESA B3
D240	23118859	DIODE, 1SS133
D301	23357366	DIODE, FR105-B5
D302	23118094	DIODE, EU2A
D303	23316794	DIODE, SC570A
D304	23118094	DIODE, EU2A
D313	23118859	DIODE, 1SS133
D320	23118859	DIODE, 1SS133
D327	23118513	DIODE, ZENER, RD11ESA B3
D336	23118529	DIODE, ZENER, RD5.6ES B2
D337	23118529	DIODE, ZENER, RD5.6ES B2
D370	23357366	DIODE, FR105-B5
D371	23357366	DIODE, FR105-B5
D373	23118519	DIODE, ZENER, RD8.2ES
D374	23118859	DIODE, 1SS133
D399	23118608	DIODE, ZENER, RD33ES B2
D404	23224366	DIODE, FMQ-3GU
D406	23357366	DIODE, FR105-B5
D415	23118094	DIODE, EU2A
D418	23118613	DIODE, ZENER, RD30ESA B1
D419	23118621	DIODE, ZENER, RD10ESA B3
D420	23118522	DIODE, ZENER, RD7.5ES-B3
D421	23118524	DIODE, ZENER, RD7.5ES B1
D422	23118504	DIODE, ZENER, RD15ES B3
D431	23118532	DIODE, ZENER, RD5.1ESA B2
D432	23118531	DIODE, ZENER, RD5.1ESA B3
D436	23118859	DIODE, 1SS133
D441	23118517	DIODE, ZENER, RD9.1ES
D442	23118094	DIODE, EU2A
D462	23118505	DIODE, ZENER, RD15ESA B2
D467	23118094	DIODE, EU2A
D470	23118531	DIODE, ZENER, RD5.1ESA B3
D474	23118511	DIODE, ZENER, RD12ES B2
D498	23357282	DIODE, DZ9.1 BS B
D499	23118859	DIODE, 1SS133
D502	23118041	DIODE, MA111
D506	23316673	DIODE, ZENER, MTZJ5.6C
D520	23118641	DIODE, ZENER, RD2.0ESA B2
D611	23118041	DIODE, MA111
D612	23118041	DIODE, MA111
D613	23118041	DIODE, MA111
D614	23118041	DIODE, MA111
D627	23118041	DIODE, MA111
D628	23118041	DIODE, MA111
D670	23118041	DIODE, MA111
D671	23118041	DIODE, MA111
D672	23118041	DIODE, MA111
D673	23118041	DIODE, MA111
D674	23118041	DIODE, MA111
D675	23118041	DIODE, MA111
D704	23118859	DIODE, 1SS133
D705	23118859	DIODE, 1SS133
D715	23118859	DIODE, 1SS133
D721	23118859	DIODE, 1SS133
D801	23357041	DIODE, LN6SB60-F05
D805	23357012	DIODE, 1SS244

Location No.	Parts No.	Description
D806	23357366	DIODE, FR105-B5
D807	23357012	DIODE, 1SS244
D808	23118859	DIODE, 1SS133
D817	23118608	DIODE, ZENER, RD33ES B2
D840	23316711	DIODE, S1WBA60
D841	23118528	DIODE, ZENER, RD5.6ESA B3
D842	23118506	DIODE, ZENER, RD15ES B1
D844	23118518	DIODE, ZENER, RD9.1ES
D845	23118859	DIODE, 1SS133
D855	23118859	DIODE, 1SS133
D871	23357366	DIODE, FR105-B5
D883	23118338	DIODE, RU4AM LF-K2
D885	23316184	DIODE, FML-G12S
D891	23316463	DIODE, RK46
D892	23118052	DIODE, RU4Z LF-L1
D893	23118528	DIODE, ZENER, RD5.6ESA B3
D894	23118528	DIODE, ZENER, RD5.6ESA B3
D901	23118859	DIODE, 1SS133
D904	23118859	DIODE, 1SS133
D905	23118859	DIODE, 1SS133
D906	23118859	DIODE, 1SS133
D907	23118859	DIODE, 1SS133
D908	23118859	DIODE, 1SS133
D909	23118859	DIODE, 1SS133
D911	23357366	DIODE, FR105-B5
D4410	23118859	DIODE, 1SS133
D4411	23118859	DIODE, 1SS133
D4412	23118859	DIODE, 1SS133
D4699	23357366	DIODE, FR105-B5
DA42	23316673	DIODE, ZENER, MTZJ5.6C
DB02	23358564	DIODE, LED, SLR-56VC3FPQ
DB03	23358563	DIODE, LED, SLR-56MC3FPQR
DJ01 #2	23118859	DIODE, 1SS133
DJ02 #2	23118504	DIODE, ZENER, RD15ES B3
DR01	23357447	DIODE, SWITCH SILICON KDS160-RTK/USC
DR02	23357447	DIODE, SWITCH SILICON KDS160-RTK/USC
DR03	23357447	DIODE, SWITCH SILICON KDS160-RTK/USC
DR12	23357172	DIODE, ZENER, UDZS10B
DR13	23357172	DIODE, ZENER, UDZS10B
DR14	23357172	DIODE, ZENER, UDZS10B
DR70	23357037	DIODE, ZENER, UDZS5.6B
DR71	23357037	DIODE, ZENER, UDZS5.6B
DS09	23118041	DIODE, MA111
DS11	23118041	DIODE, MA111
DS12	23118041	DIODE, MA111
DV16	23357037	DIODE, ZENER, UDZS5.6B
DV17	23357037	DIODE, ZENER, UDZS5.6B
DV18	23357037	DIODE, ZENER, UDZS5.6B
DV19	23357037	DIODE, ZENER, UDZS5.6B
DV20	23357037	DIODE, ZENER, UDZS5.6B
DV21	23357037	DIODE, ZENER, UDZS5.6B
G443	23118859	DIODE, 1SS133
G684	23118041	DIODE, MA111
KB01	23000852	IC, REMOTE PHOTO RECEIVER, PIC-37043TE2

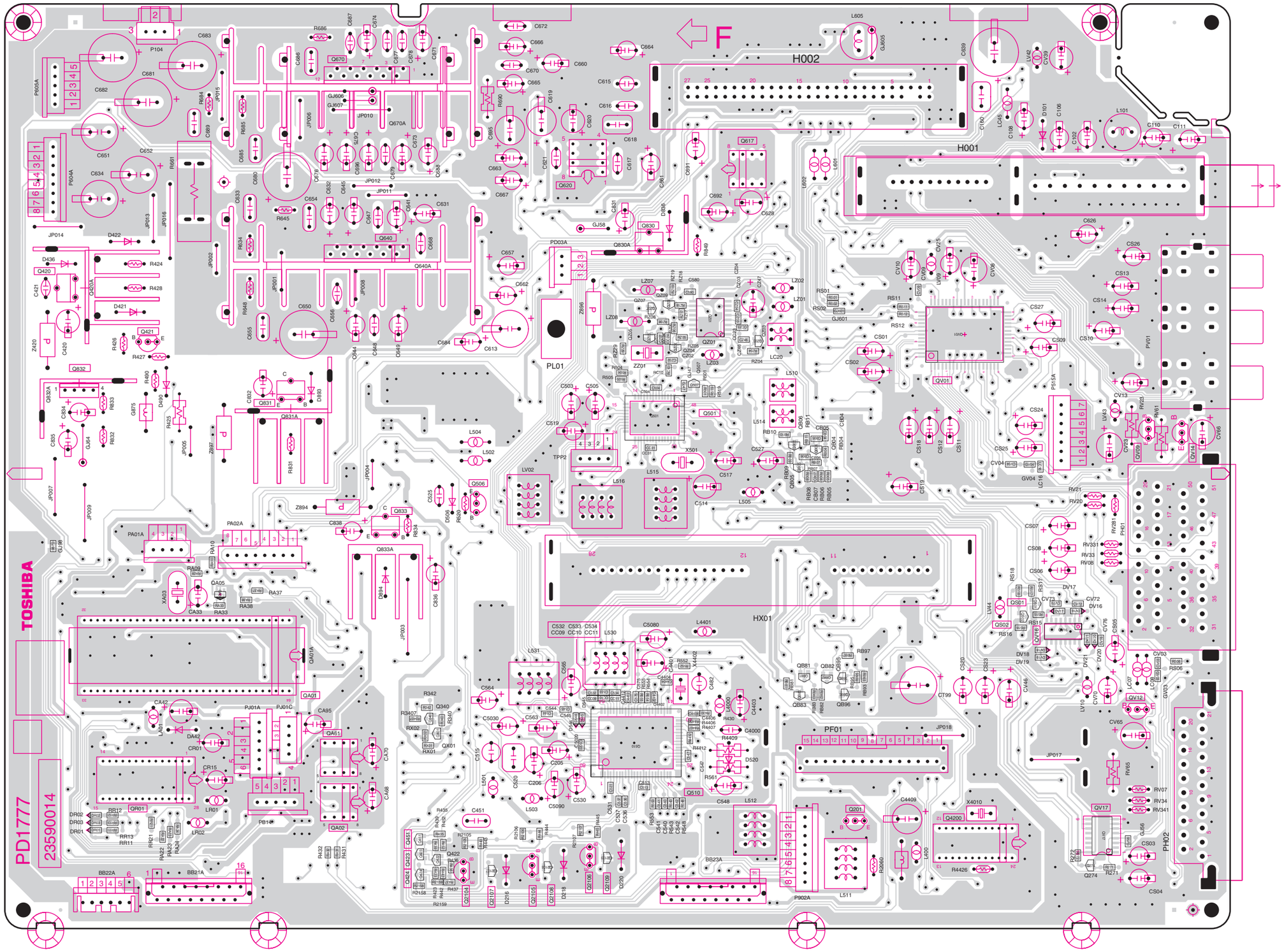
MISCELLANEOUS

A433 #2	23037310	SCREW, 3X10MM, TQPPING
BB15A	23902749	CONNECTOR, SOCKET, B-B 6P
BB15B	23368517	CONNECTOR, PLUG, B-B 6P
BB16A	23903022	CONNECTOR, BASE B-B 8P 2.5 JST
BB21A	23713014	CONNECTOR, BRIDGE PLUG 16P 1.5
BB21B	23713013	CONNECTOR, SOCKET, B-B 16P 1.5
BB22A	23368517	CONNECTOR, PLUG, B-B 6P
BB22B	23902749	CONNECTOR, SOCKET, B-B 6P
BB23A	23713014	CONNECTOR, BRIDGE PLUG 16P 1.5
BB23B	23713013	CONNECTOR, SOCKET, B-B 16P 1.5
D885B	70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
⚠ F470	23144503	FUSE, CARTRIDGE 5.2X20 250V 1.25A
F470A	23165433	FUSE HOLDER, 5.2 SOC
⚠ F801	23144508	FUSE, CARTRIDGE 5.2X20, 250V 4.0A
F801A	23165433	FUSE HOLDER, 5.2 SOC
⚠ F802	23144506	FUSE, CARTRIDGE 5.2X20, 50V 2.5A
F802A	23165433	FUSE HOLDER, 5.2 SOC
⚠ F889	23144458	FUSE, 5.0A 250V
F889A	23165433	FUSE HOLDER, 5.2 SOC
H002	23148745	MODULE, NICAM/IGR A-PRO MPSN11C

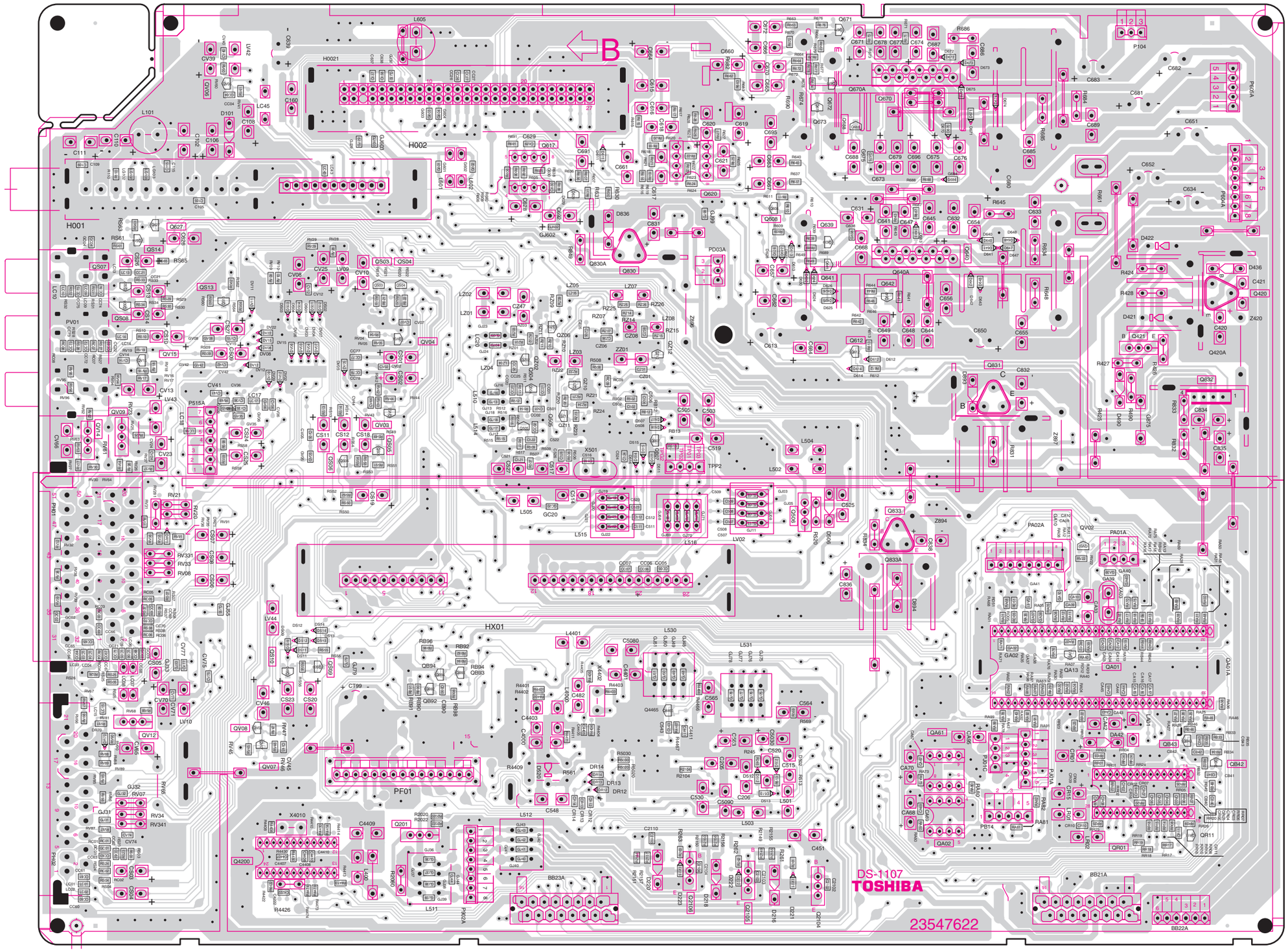
Location No.		Parts No.	Description
HX01		23148027	SCAN CONVERTER MODULE, MDFS03
P104		23368577	CONNECTOR, PLUG, 3P 2.5MM G JST-EH, B3B-EH-F1-TV4
P515A		23368581	CONNECTOR, PLUG 7P, 2.5MM G JST-EH B7B-EH-F1-TV4
P515B		23368581	CONNECTOR, PLUG 7P, 2.5MM G JST-EH B7B-EH-F1-TV4
P605A		23368579	CONNECTOR, PLUG 5P, 2.5MM G JST-EH, B5B-EH-F1-TV4
P605B		23368579	CONNECTOR, PLUG 5P, 2.5MM G JST-EH, B5B-EH-F1-TV4
P660A		23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
P661		23363607	JACK, HEAD PHONE, 3.5MM
⚠ P801		23372151	POWER CORD, AC250V3A L/FUSE13A GB13F1 @E801B
⚠		23372052	POWER CORD, 250V2.5A @E801C
P801A		23368013	CONNECTOR, PLUG, 2P 11.88MM W VT-JST
P821A		23368013	CONNECTOR, PLUG, 2P 11.88MM W VT-JST
P821B		23368013	CONNECTOR, PLUG, 2P 11.88MM W VT-JST
P831A		23368013	CONNECTOR, PLUG, 2P 11.88MM W VT-JST
P831B		23368013	CONNECTOR, PLUG, 2P 11.88MM W VT-JST
P902A		23367068	CONNECTOR, PLUG 8P, 2.5MM G JST-EH B8B-EH-F1-TV4
P902B		23367068	CONNECTOR, PLUG 8P, 2.5MM G JST-EH B8B-EH-F1-TV4
P903A		23367069	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A
P903B		23367069	CONNECTOR, PLUG, NP 2.5MM G JST-EH, B9B-EH-F1A
PA01A		23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
PA01B		23368578	CONNECTOR, PLUG 4P, 2.5MM G JST-EH, B4B-EH-F1-TV4
PA02A		23367068	CONNECTOR, PLUG 8P, 2.5MM G JST-EH B8B-EH-F1-TV4
PA02B		23368587	CONNECTOR, PLUG, 8P 2.5MM W EH-JST, S8B-EH
PB14		23368579	CONNECTOR, PLUG 5P, 2.5MM G JST-EH, B5B-EH-F1-TV4
PF01		23902655	CONNECTOR, B-B 15P
PH02		23365598	CONNECTOR, 21 PIN, 2100RFT
PJ01A	#2	23368580	CONNECTOR, PLUG 6P, 2.5MM G JST-EH B6B-EH-F1-TV4
PJ01B	#2	23368580	CONNECTOR, PLUG 6P, 2.5MM G JST-EH B6B-EH-F1-TV4
PJ901	#2	23368584	CONNECTOR, PLUG, 3P2.5MM W EH-JST S3B-EH
PT01		23367724	CONNECTOR, PLUG B-B 15P
PV01		23023008	JACK, PIN JACK(1G,1BL,3R,2W) IJB79-TZ
Q301B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q404B		23850638	INSULATOR, TRANSISTOR, AC263
Q418B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q420B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q430B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q670B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q711B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q712B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q831B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q833B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q840B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q901B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q903B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
Q905B		70391355	SCREW, BIND HEAD TAP-TITE B, BITTB 3X8 SZN
⚠ S801		23344385	SWTCH, POWER, PUSH 2C1P TV5, OMRON
SA01		23344443	SWITCH, TACTING SWITCH TSV TYP TSVB-1
SA02		23344443	SWITCH, TACTING SWITCH TSV TYP TSVB-1
SA03		23344443	SWITCH, TACTING SWITCH TSV TYP TSVB-1
SA04		23344443	SWITCH, TACTING SWITCH TSV TYP TSVB-1
SA05		23344443	SWITCH, TACTING SWITCH TSV TYP TSVB-1
SJ01	#2	23146958	RELAY
SR82		23146574	RELAY, DLS5D1-O(M) 0.15W
⚠ SR83		23146570	RELAY, DC12V, 2M OMR, G5PA-2 DC12
⚠ V901A		23903145	SOCKET, CRT, WFOCUS ISD35SE INCHANG
W661	#1	23351209	SPEAKER, 55X150 8-OHM 10W SPK-1436AM
	#2	23351246	SPEAKER, 55X150 8-OHM 10W BUSH SPK-1457AM
W662	#1	23351209	SPEAKER, 55X150 8-OHM 10W SPK-1436AM
	#2	23351246	SPEAKER, 55X150 8-OHM 10W BUSH SPK-1457AM
W663		23351194	SPEAKER, SPK1392BO
X501		23153438	CRYSTAL, 16.200 25PPM 25OHM
X4010		23153721	CERAMIC RESONATOR, 503KHZ
X4402		23153721	CERAMIC RESONATOR, 503KHZ
XA03		23153394	CRYSTAL
XT01		23153930	CRYSTAL
Z404		23144708	FUSE, AXIAL 125V 1.0A
Z420		23144710	FUSE, AXIAL 125V 2.0A
Z871		23144715	FUSE, AXIAL 125V 5.0A
Z890		23144715	FUSE, AXIAL 125V 5.0A
Z891		23144715	FUSE, AXIAL 125V 5.0A
Z894		23144710	FUSE, AXIAL 125V 2.0A
Z897		23144710	FUSE, AXIAL 125V 2.0A
PC BOARD ASSEMBLIES			
✻ U104		23762101	PC BOARD ASSY, TEXT-P2 PU PD0267H
✻ U901	#1	23762362	PC BOARD ASSY, CRT-D PWU PD1776B
✻	#2	23762368	PC BOARD ASSY, CRT-D PWU PD1776C
✻ U902	#1	23762363	PC BOARD ASSY, SIGNAL PWU PD1777B
✻	#2	23762369	PC BOARD ASSY, SIGNAL PWU PD1777C
✻ U903A	#1	23762365	PC BOARD ASSY, POWER PWU PD1778B-1
✻	#2	23762371	PC BOARD ASSY, POWER PWU PD1778C-1
✻ U903B	#1	23762366	PC BOARD ASSY, INDICATOR PWU PD1778B-2
✻	#2	23762372	PC BOARD ASSY, INDICATOR PWU PD1778C-2
✻ U903C	#1	23762367	PC BOARD ASSY, CONTROL PWU PD1778B-3
✻	#2	23762373	PC BOARD ASSY, CONTROL PWU PD1778C-3
✻ U904	#1	23762364	PC BOARD ASSY, DEF PWU PD1779B
✻	#2	23762370	PC BOARD ASSY, DEF PWU PD1779C
PICTURE TUBE			
⚠ V901	#1	23324107	PICTURE TUBE, 30VPFW RACD-SUP W76LXK003X30
	#2	23324108	PICTURE TUBE, 34VPFW RACD-SUP W86LXK003X30
TUNER			
H001		23321398	TUNER, TADF4-003A, EURO IF ALPS
ACCESSORIES			
A701		23067793	CARTON, CARTON BAZOOKA @A403
	#1	23067114	CARTON, CARTON @A007
	#2	23067076	CARTON, CARTON @A007
A702	#1	23946487	PACKING, BOTTOM PACKING
	#2	23946474	PACKING, BOTTOM PACKING
A703	#1	23946488	PACKING, TOP PACKING
	#2	23946475	PACKING, TOP PACKING
A800		23946781	PACKING, PACKING TRAY
A801		23946782	PACKING, TP COVER
A804	#2	23067754	CARTON, PACKING SHEET
K902		23306435	REMOCON HAND UNIT IR, CTVPAL CT-90101 @Y001B
		23306435	REMOCON HAND UNIT IR, CTVPAL CT-90101 @Y001C
Y101A		23566376	OWNERS MANUAL, ENGLISH
Y101E		23566377	OWNERS MANUAL, EURO
CABINET PARTS			
A201S	#1	23532788	COVER, FRONT COVER FOR SERVICE
	#2	23532791	COVER, FRONT COVER FOR SERVICE
A202	#1	23532789	COVER, BEZEL ASSEMBLY
	#2	23532792	COVER, BEZEL ASSEMBLY
A231		23445701	BUTTON, BUTTON(POWER)
A241		70368125	PUSH CATCH
A242		23428184	DOOR, DOOR PROPER
⚠ A401	#1	23530806	COVER, BACK COVER ASSEY
⚠	#2	23530753	COVER, BACK COVER ASSEY
A403		23150276	SP BOX, WOOFER BOX ASSEY
A434		23845856	WIRE CLAMP, POF COAT) L=70MM
A810		23936135	TRAY, PALETT 130X777X1072
E504	#2	23198692	WIRE, CRT EARTH 36ZP50

SIGNAL BOARD PD1777B (32ZP46P) (U902)
SIGNAL BOARD PD1777C (36ZP46P) (U902)

TOP (COMPONENT) SIDE

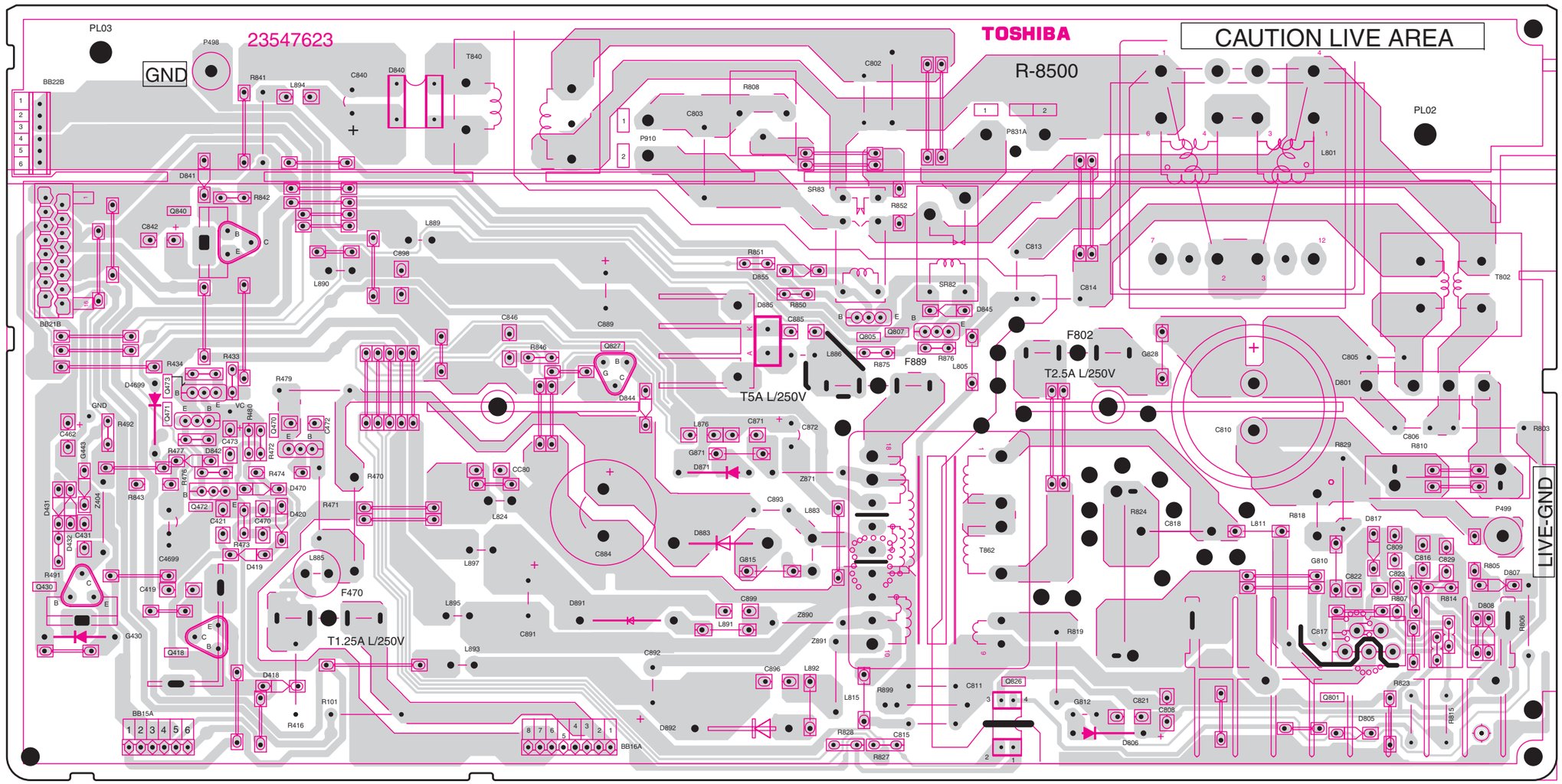


SIGNAL BOARD PD1777B (32ZP46P) (U902)
SIGNAL BOARD PD1777C (36ZP46P) (U902)
BOTTOM (FOIL) SIDE



POWER BOARD PD1778B-1 (32ZP46P) (U903A)
POWER BOARD PD1778C-1 (36ZP46P) (U903A)

BOTTOM (FOIL) SIDE


TOSHIBA
R-8500
CAUTION LIVE AREA
23547623
PL03
PL02
GND
LIVE-GND
T5A L/250V
T2.5A L/250V
T1.25A L/250V
F470
F802
F889
BB22B
BB21B
BB15A
BB16A
T840
T862
T802
L801
P831A
P910
P498
P499
SR83
SR82
D4699
Q840
Q418
Q430
Q471
Q472
Q473
Q470
Q805
Q807
Q826
Q801
G430
G443
G871
G810
G812
G815
G828
D841
D842
D844
D845
D855
D885
D871
D883
D891
D892
D801
D806
D817
D818
D419
D420
D431
D432
Z404
Z871
Z890
Z891
L824
L885
L889
L890
L893
L895
L897
L876
L883
L886
L891
L805
L811
C462
C473
C4699
C421
C431
C470
C842
C898
C846
C889
C884
C891
C892
C893
C896
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C813
C814
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C809
C810
C811
C815
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C817
C818
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C822
C823
C824
C829
R492
R843
R842
R841
R808
R851
R850
R852
R846
R875
R876
R434
R433
R479
R477
R476
R472
R474
R471
R470
R473
R491
R418
R416
R101
R899
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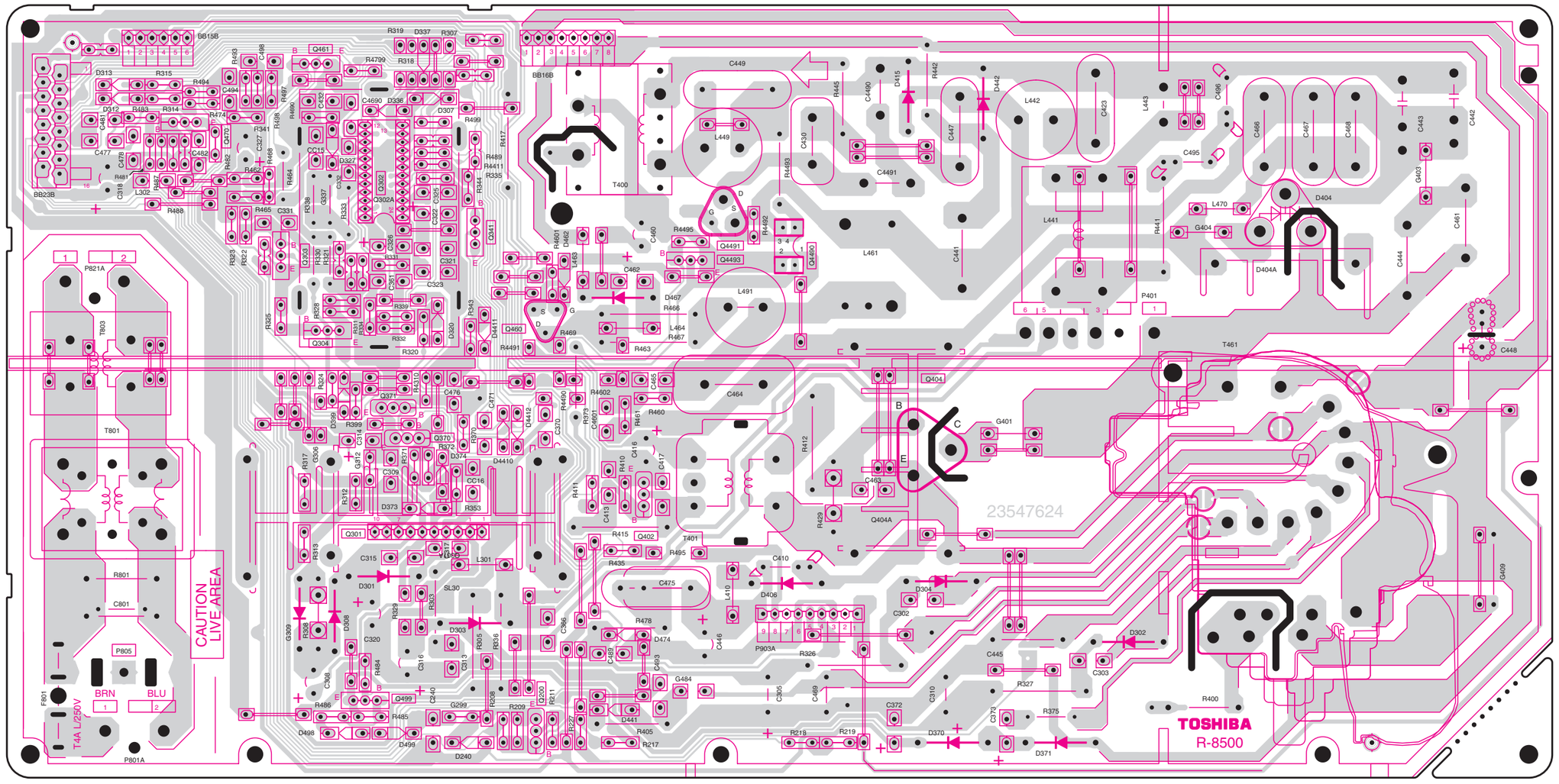
R827
R819
R824
R818
R829
R810
R803
R805
R807
R814
R815
R823
R806
R808
L894
C840
D840
C840
C4699
C419
C430
C418
C462
C473
C421
C470
C884
C885
C889
C891
C892
C893
C896
C899
C872
C871
C876
C883
C884
C885
C889
C891
C892
C893
C896
C899

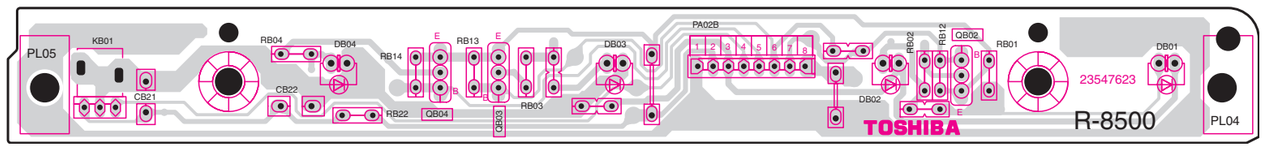
DEF BOARD PD1779B (32ZP46P) (U904)
DEF BOARD PD1779C (36ZP46P) (U904)

BOTTOM (FOIL) SIDE



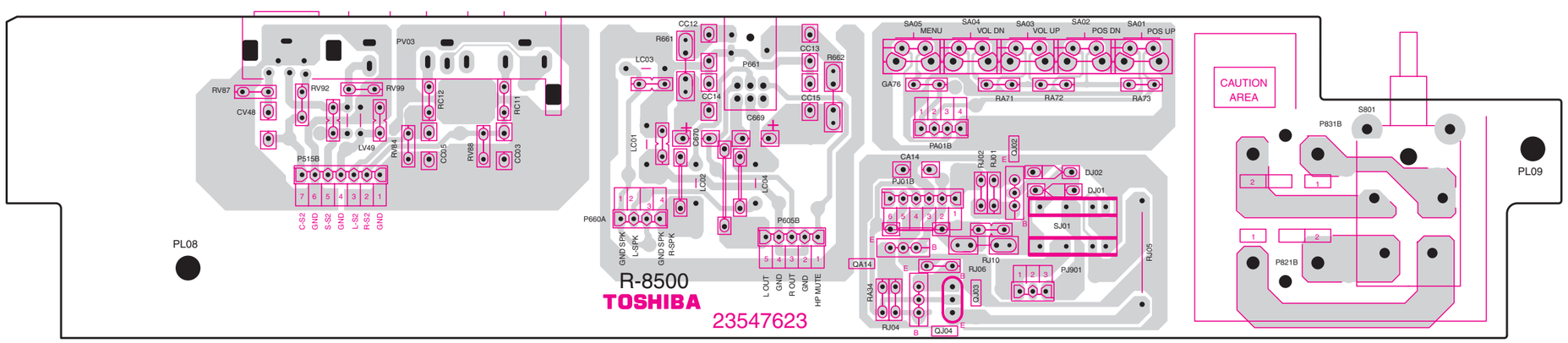
INDICATOR BOARD PD1778B-2 (32ZP46P) (U903B)
INDICATOR BOARD PD1778C-2 (36ZP46P) (U903B)

BOTTOM (FOIL) SIDE



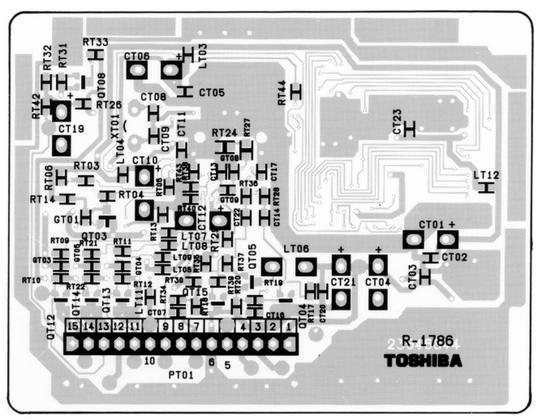
CONTROL BOARD PD1778B-3 (32ZP46P) (U903C)
CONTROL BOARD PD1778C-3 (36ZP46P) (U903C)

BOTTOM (FOIL) SIDE



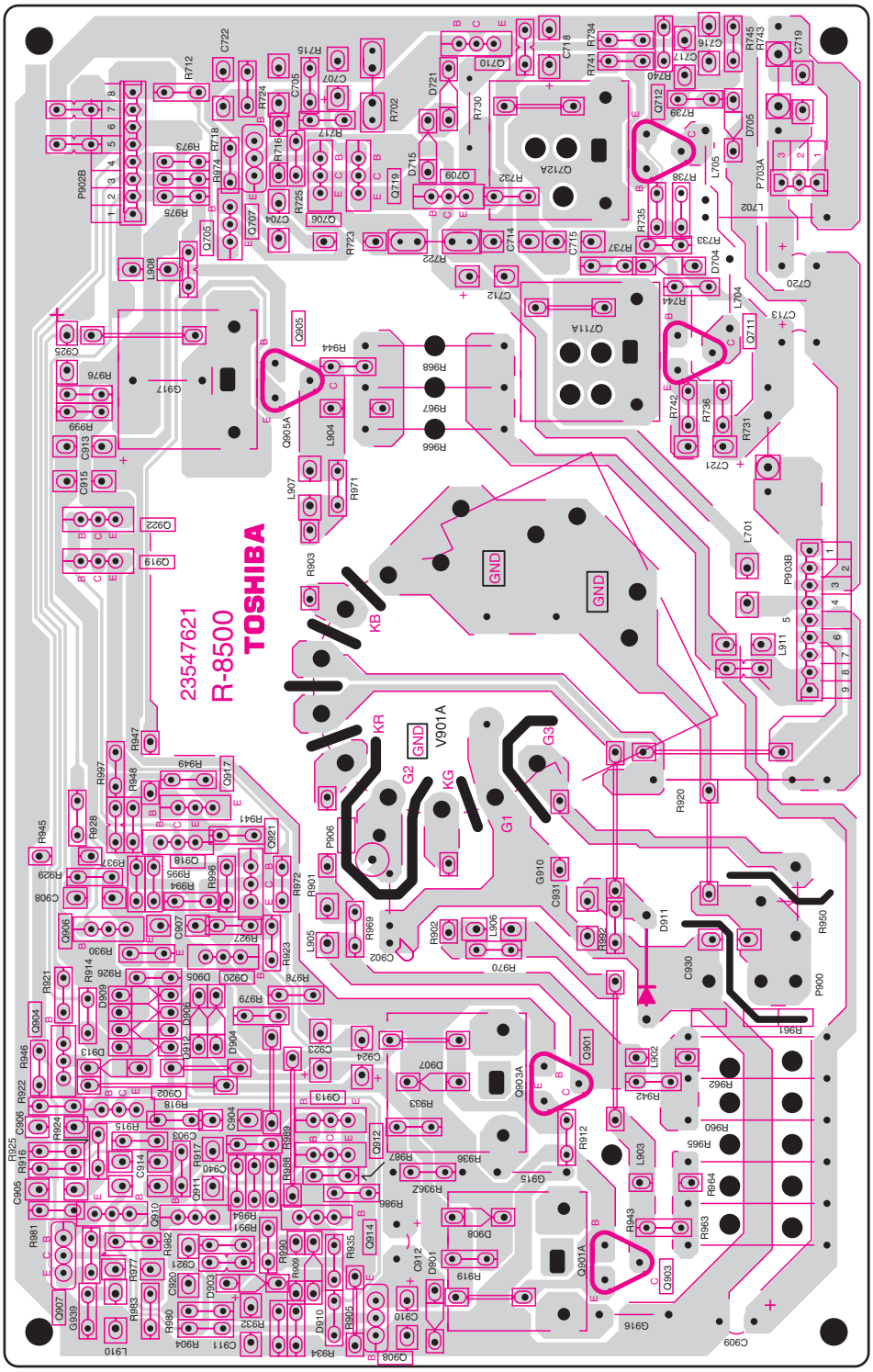
TEXT-P2 BOARD PD0267H (U104)

BOTTOM (FOIL) SIDE



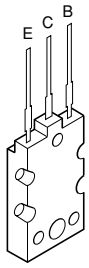
CRT-D BOARD PD1776B (32ZP46P) (U901)
CRT-D BOARD PD1776C (36ZP46P) (U901)

BOTTOM (FOIL) SIDE

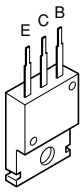


TERMINAL VIEW OF TRANSISTORS

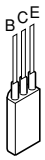
① 2SD2253
(old)
2SC5243
2SC5570



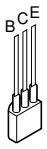
② 2SC3852
2SD1763A
2SC1569
2SC4544
2SA1788
2SA1306
2SA1186A



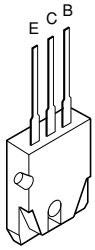
③ 2SC752GTM
2SC2482
2SC2655
2SC4721P



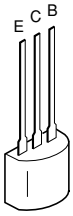
④ 2SC752
2SA562TM
2SA1015
2SC1815
2SC2878
2SC1740S
2SC2120
2SA9335



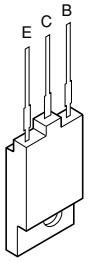
⑤ 2SA1788



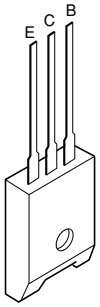
⑥ RN2203
RN2201
RN2004
RN1203
RN1204
RN2204
RN1205
RN1202
RN1201



⑦ 2SD1554
2SD2253
2SD1556
2SC5143
2SD2553



⑧ ON4409



SCHEMATIC DIAGRAM

MODEL : 32ZP46P/36ZP46P

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

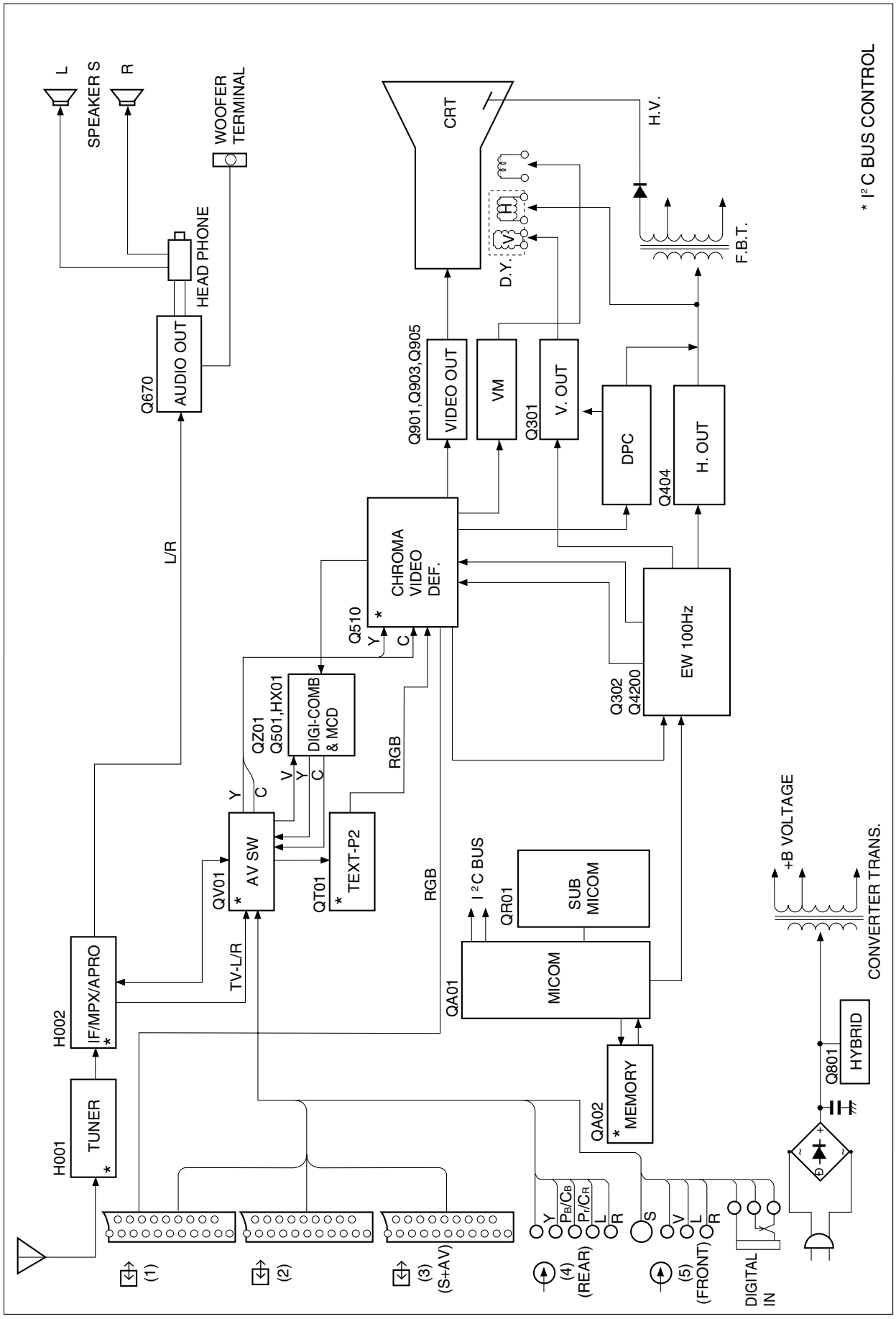
NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt
   1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt
   10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   Electolytic capacitor Mylar capacitor
3. The parts indicated with "⚠" have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage at 220 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

■ SCHEMATIC DIAGRAM STRUCTURE:

- SIGNAL Circuit
  - CONNECTORS [SHEET– 1/10] 1/17
  - MICRO [SHEET– 2/10] 2/17
  - AV [SHEET– 3/10] 3/17
  - COMB & MCD [SHEET– 4/10] 4/17
  - BEP [SHEET– 5/10] 5/17
  - AUDIO [SHEET– 6/10] 6/17
  - IF [SHEET– 7/10] 7/17
  - LOW-B REGULATOR [SHEET– 8/10] 8/17
  - FREQ_DET [SHEET– 9/10] 9/17
  - TEXT [SHEET– 10/10] 10/17
- POWER_INDI_CONT Circuit
  - POWER [SHEET– 1/3] 11/17
  - INDICATOR [SHEET– 2/3] 12/17
  - CONTROL [SHEET– 3/3] 13/17
- DEF Circuit
  - HORIZONTAL-DEF [SHEET– 1/2] 14/17
  - VERTICAL-DEF [SHEET– 1/2] 15/17
- CRT Circuit 16/17
- TEXT-P2 Circuit 17/17

CIRCUIT BLOCK DIAGRAM



SPECIFICATIONS

MODEL	32ZP46P	36ZP46P
Broadcast systems/channels	PAL-I UHF UK21-UK69 PAL-B/G UHF E21-E69 VHF E2-E12, S1-S41 SECAM-L UHF F21-F69 VHF F1-F10, B-Q SECAM-D/K UHF R21-R69 VHF R1-R12	
Video Input	PAL, SECAM, NTSC 3.58/4.43	
External connections	EXT1 Input 21-pin SCART RGB, A/V EXT2 Input 21-pin SCART RGB, A/V EXT3 Input/Output 21-pin SCART A/V, S-video, Selectable output EXT4 Input Phono jacks Y, P_B /C_B , P_R /C_R Phono jacks Audio L + R EXT5 Input (front) 4-pin S-video Phono jack Video Phono jacks Audio L + R Fixed Output Phono jacks Audio L + R	
Programme Positions	100	
Stereo	Nicam 2 carrier system	
Visible Screen Size (approx.)	76cm	86cm
Display	16:9 aspect ratio	
Sound output (at 10% distortion)	Main 10W + 10W Woofer 13W	
Power consumption as specified in EN60107-1 1997	145W	155W
Standby	<2.5W	
Dimensions (approx.)	55cm (H) x 76cm (W) x 56cm (D)	63cm (H) x 86cm (W) x 60cm (D)
Weight (approx.)	52kg	76kg
Headphone socket	3.5mm stereo	

* Please refer to owner's manual in detail.

– END –

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN

SCHEMATIC DIAGRAM

MODEL : 32ZP46P/36ZP46P

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

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NOTE:

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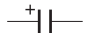
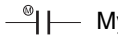
   1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt
   10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
    Electolytic capacitor  Mylar capacitor
3. The parts indicated with "⚠" have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage at 220 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

■ SCHEMATIC DIAGRAM STRUCTURE:

SIGNAL Circuit
- CONNECTORS [SHEET– 1/10] 1/17
- MICRO [SHEET– 2/10] 2/17
- AV [SHEET– 3/10] 3/17
- COMB & MCD [SHEET– 4/10] 4/17
- BEP [SHEET– 5/10] 5/17
- AUDIO [SHEET– 6/10] 6/17
- IF [SHEET– 7/10] 7/17
- LOW-B REGULATOR [SHEET– 8/10] 8/17
- FREQ_DET [SHEET– 9/10] 9/17
- TEXT [SHEET– 10/10] 10/17

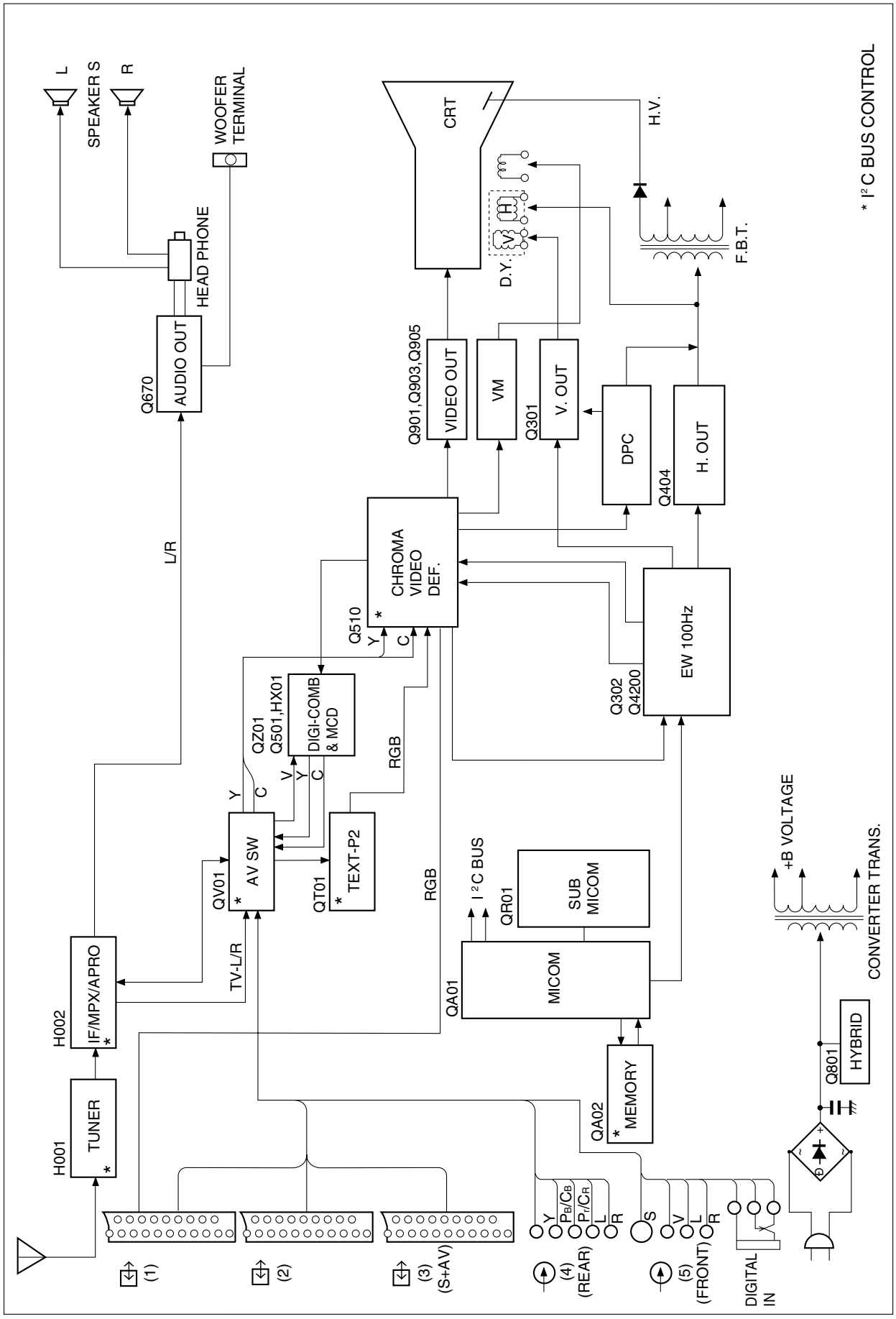
POWER_INDI_CONT Circuit
- POWER [SHEET– 1/3] 11/17
- INDICATOR [SHEET– 2/3] 12/17
- CONTROL [SHEET– 3/3] 13/17

DEF Circuit
- HORIZONTAL-DEF [SHEET– 1/2] 14/17
- VERTICAL-DEF [SHEET– 1/2] 15/17

CRT Circuit 16/17

TEXT-P2 Circuit 17/17

CIRCUIT BLOCK DIAGRAM



U903B INDICATOR BOARD

U903C CONTROL BOARD

U903A POWER BOARD

BAZOOKA
WOOFER-SPK

OPEN

U902 SIGNAL BOARD

U905 D-IN BOARD

U906 EXT-SPK BOARD

U904 DEF BOARD

U901 CRT-D BOARD

SHEET No.	CIRCUIT NAME
1	CONNECTORS
2	MICRO
3	AV
4	COMB & MCD
5	BEP
6	AUDIO
7	IF
8	LOW-B REG.
9	FREQ_DET
10	TEXT
99	SUB MATERIALS

32ZP46P/36ZP46P
SIGNAL (CONNECTORS)
SHEET-1/10

for Production

PB14
5P_2.5mm

QA01
CXP750010-308S

QA01A
SHIELD_COVER

QA61
AT24C256-10PI-2.7

QA02
AT24C64A-10PI-2.7

QR01
MB90096P-232

QA41
TEM2121M

QA02
TEM2121M

QA10
TEM2121M

QA38
TEM2121M

QA40
TEM2121M

QA05
PST9146NL

QA13
2SA1576A

QB92
2SC4081T

QB93
2SA1576A

QB94
2SA1576A

QB81
2SC3326B

QB82
2SC1326B

QB83
2SA1576A

QB95
2SA1576A

QB96
2SA1576A

QV02
2SC4081T

LR01
TRF41R0AF

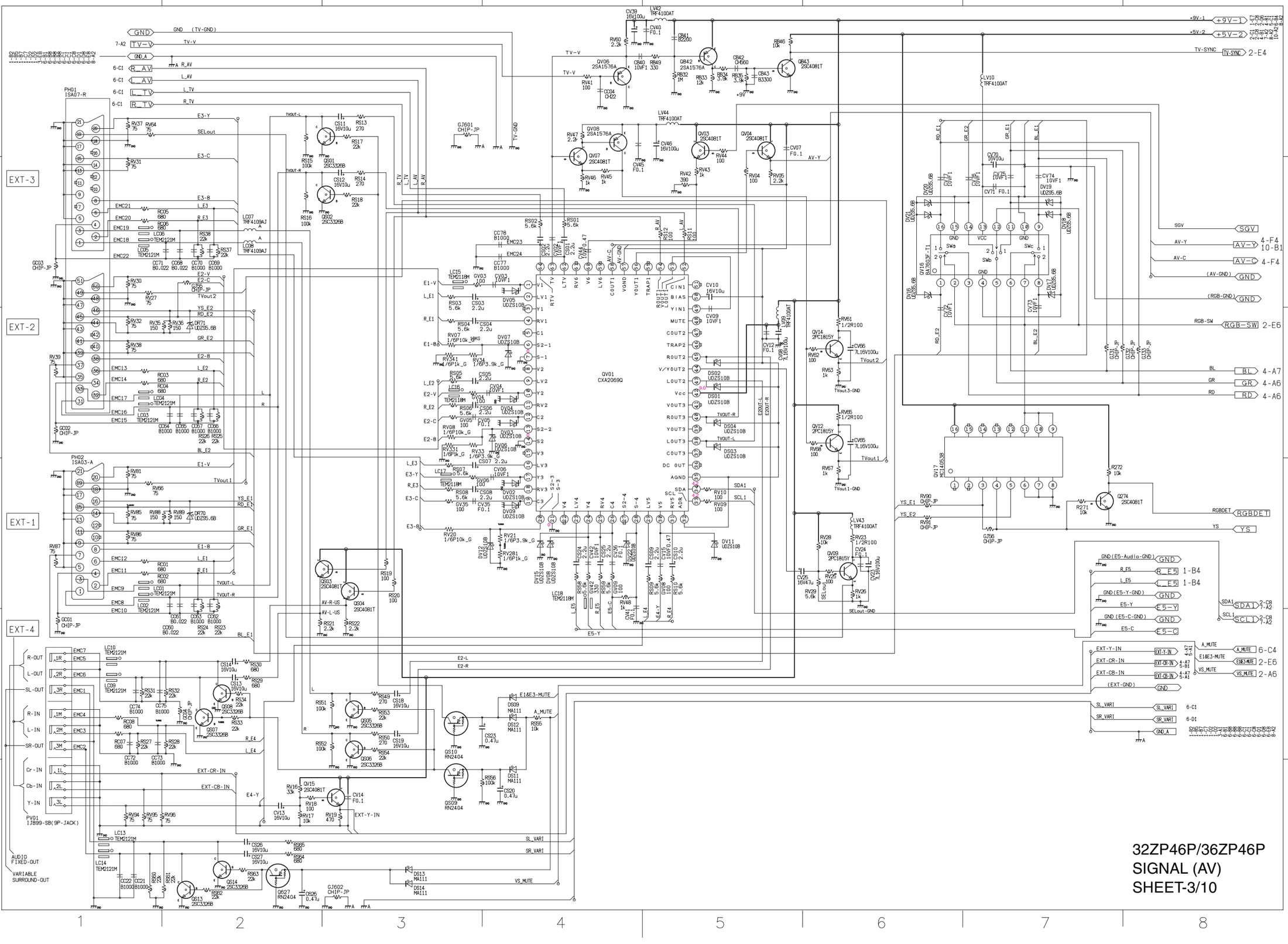
LR02
TRF41R0AF

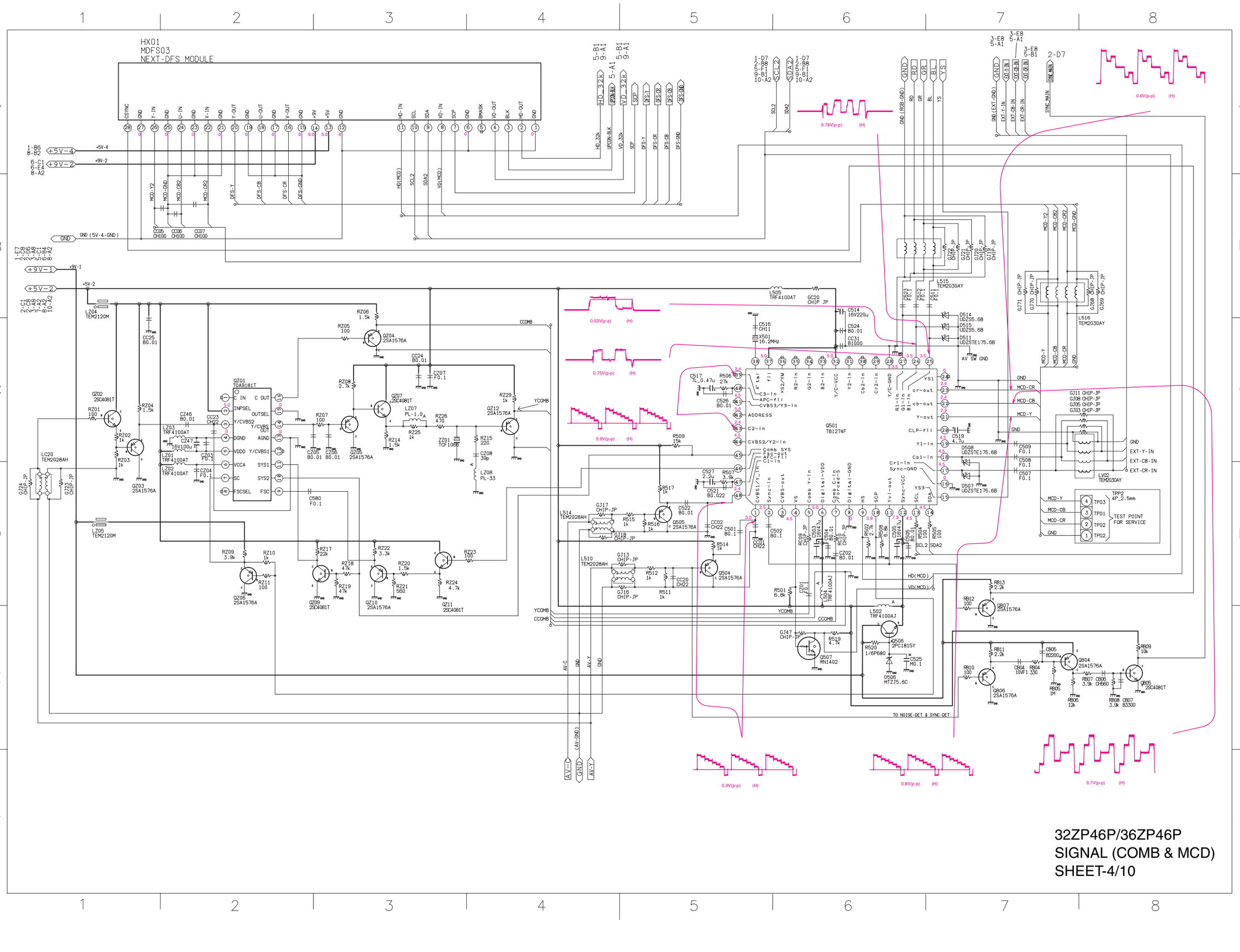
LA01
TRF4100AT

DA42
RT27S.6C

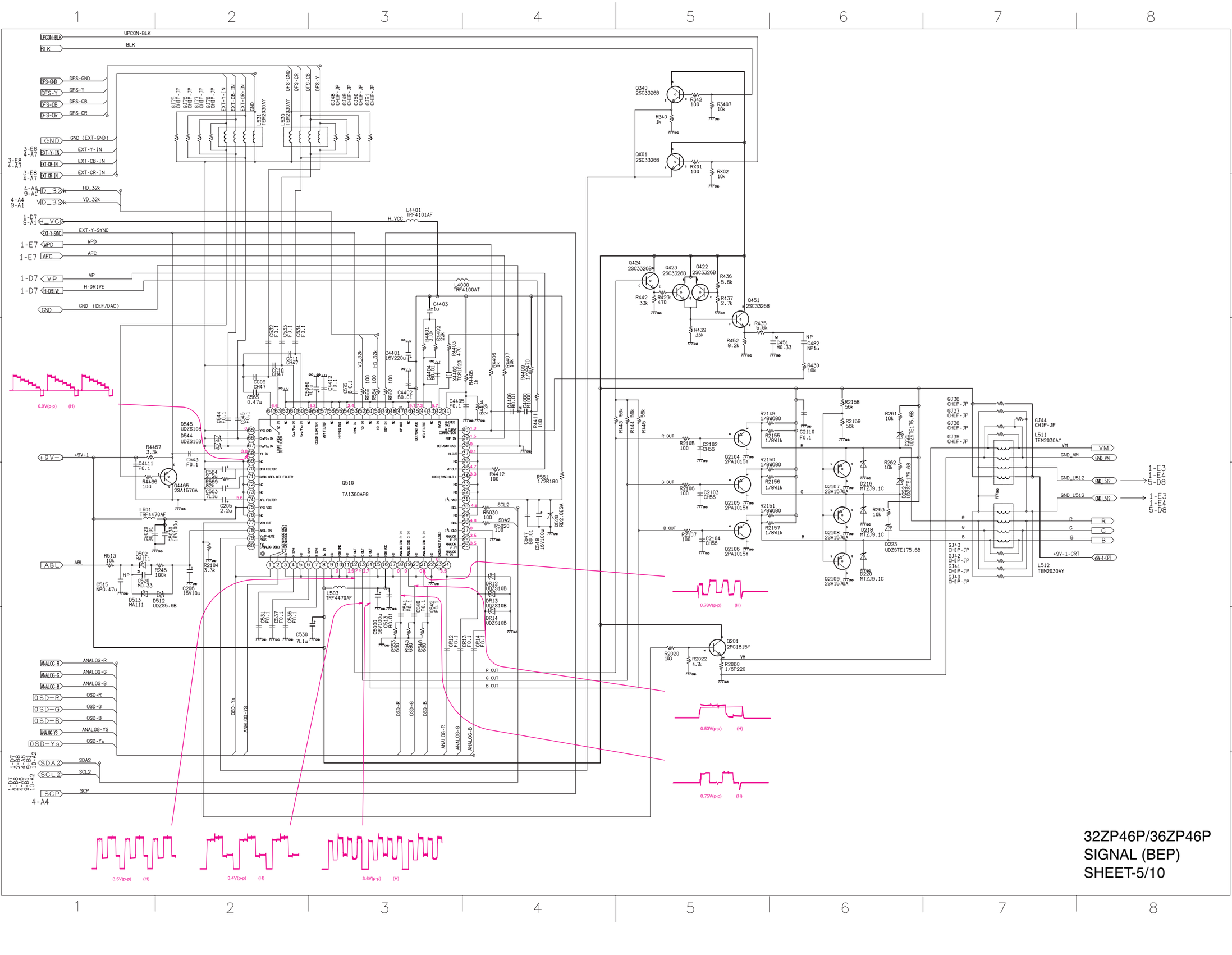
XA03
16.0MHz

32ZP46P/36ZP46P
SIGNAL (MICRO)
SHEET-2/10

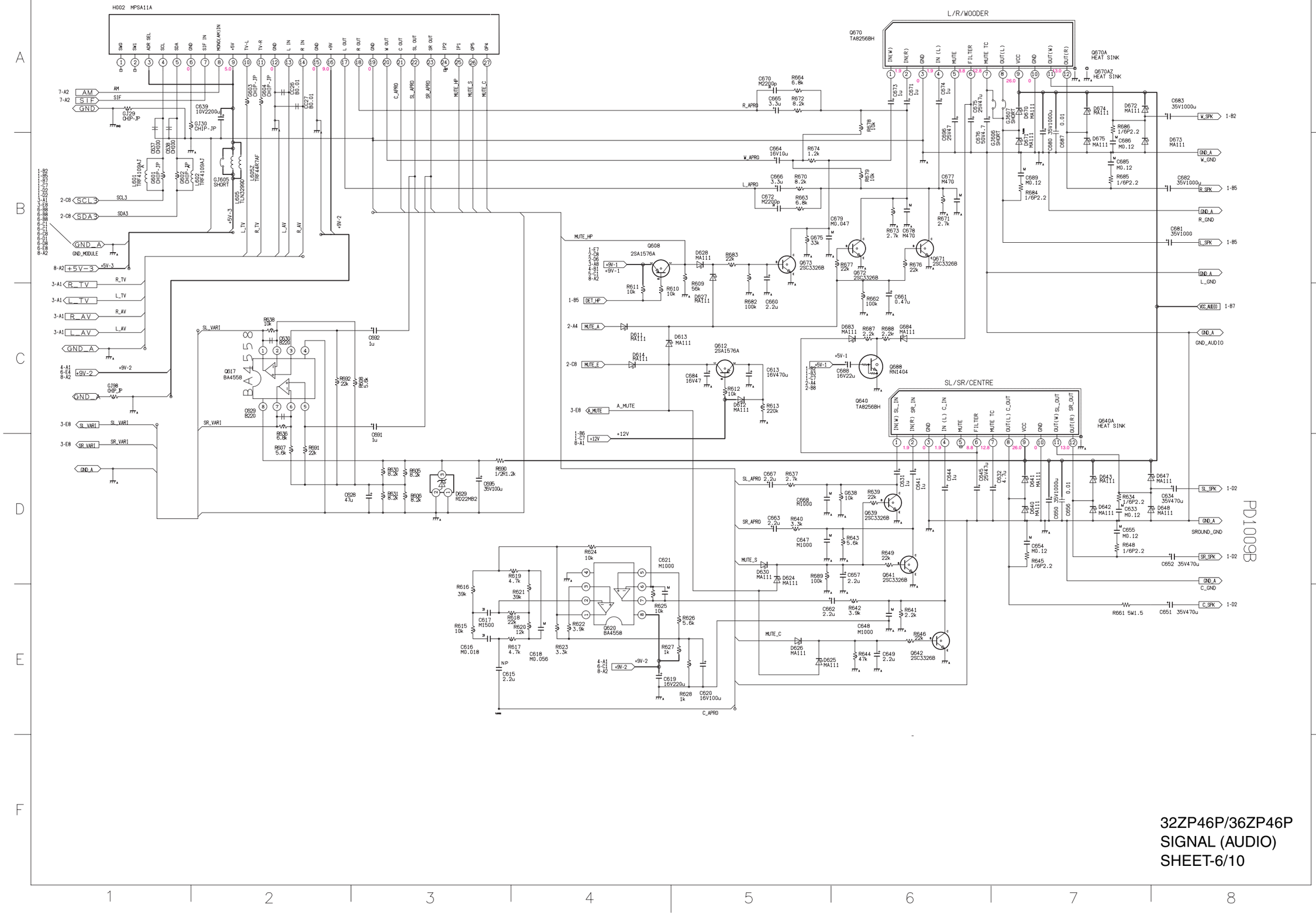

EXT-3
EXT-2
EXT-1
EXT-4
PH01 1SA07-R
PH02 1SA03-A
PV01 IJB99-SB(9P-JACK)
GND (TV-GND)
TV-V
R_AV
L_AV
L_TV
R_TV
SELout
E3-Y
E3-C
E3-8
E2-V
E2-C
TVout2
YS_E2
RD_E2
GR_E2
E2-8
L_E2
R_E2
E1-V
TVout1
YS_E1
RD_E1
GR_E1
E1-8
L_E1
R_E1
TVOUT-L
TVOUT-R
BL_E1
EXT-CR-IN
EXT-CB-IN
E4-Y
EXT-Y-IN
SL_VARI
SR_VARI
VS_MUTE
E2-L
E2-R
E5-Y
AUDIO FIXED-OUT
VARIABLE SURROUND-OUT
QV01 CXA2069Q
QV06 2SA1576A
QV07 2SC4081T
QV08 2SA1576A
QV03 2SC4081T
QV04 2SC4081T
QV05 2SC4081T
QV14 2PC1815Y
QV12 2PC1815Y
QV09 2PC1815Y
QV17 MC14053B
QS03 2SC4081T
QS04 2SC4081T
QS11 2SC3326B
QS12 2SC3326B
QS07 2SC3326B
QS08 2SC3326B
QS05 2SC3326B
QS06 2SC3326B
QS13 2SC3326B
QS14 2SC3326B
Q627 RN2404
QS10 RN2404
QS09 RN2404
Q274 2SC4081T
LV10 TRF4100AT
LV42 TRF4100AT
LV44 TRF4100AT
LV43 TRF4100AT
DV01 UDZS10B
DV02 UDZS10B
DV03 UDZS10B
DV04 UDZS10B
DV05 UDZS10B
DV06 UDZS10B
DV07 UDZS10B
DV08 UDZS10B
DV09 UDZS10B
DV11 UDZS10B
DV12 UDZS10B
DV15 UDZS10B
DV16 BA7603F-T1
DV17 UDZS5.6B
DV18 UDZS5.6B
DV19 UDZS5.6B
DV20 UDZS5.6B
DV21 UDZS5.6B
DS01 UDZS10B
DS02 UDZS10B
DS03 UDZS10B
DS04 UDZS10B
DS09 MA111
DS11 MA111
DS12 MA111
DS13 MA111
DS14 MA111
DR70 UDZS5.6B
DR71 UDZS5.6B
LC01 TEM2121M
LC02 TEM2121M
LC03 TEM2121M
LC04 TEM2121M
LC05 TEM2121M
LC06 TEM2121M
LC07 TRF4109AJ
LC08 TRF4109AJ
LC09 TEM2121M
LC10 TEM2121M
LC13 TEM2121M
LC14 TEM2121M
LC15 TEM2118M
LC16 TEM2118M
LC17 TEM2118M
LC18 TEM2118M
GC01 CHIP-JP
GC02 CHIP-JP
GC03 CHIP-JP
GJ601 CHIP-JP
GJ602 CHIP-JP
GJ756 CHIP-JP
+9V-1
+5V-2
TV-SYNC
SGV
AV-Y
AV-C
(AV-GND)
(RGB-GND)
RGB-SW
BL
GR
RD
RGBDET
YS
GND(E5-Audio-GND)
R_E5
L_E5
GND(E5-Y-GND)
E5-Y
GND(E5-C-GND)
E5-C
SDA1
SCL1
EXT-Y-IN
EXT-CR-IN
EXT-CB-IN
(EXT-GND)
A_MUTE
E1&E3-MUTE
SL_VARI
SR_VARI
GND_A
32ZP46P/36ZP46P
SIGNAL (AV)
SHEET-3/10


HX01
MDFS03
NEXT-DFS MODULE
32ZP46P/36ZP46P
SIGNAL (COMB & MCD)
SHEET-4/10

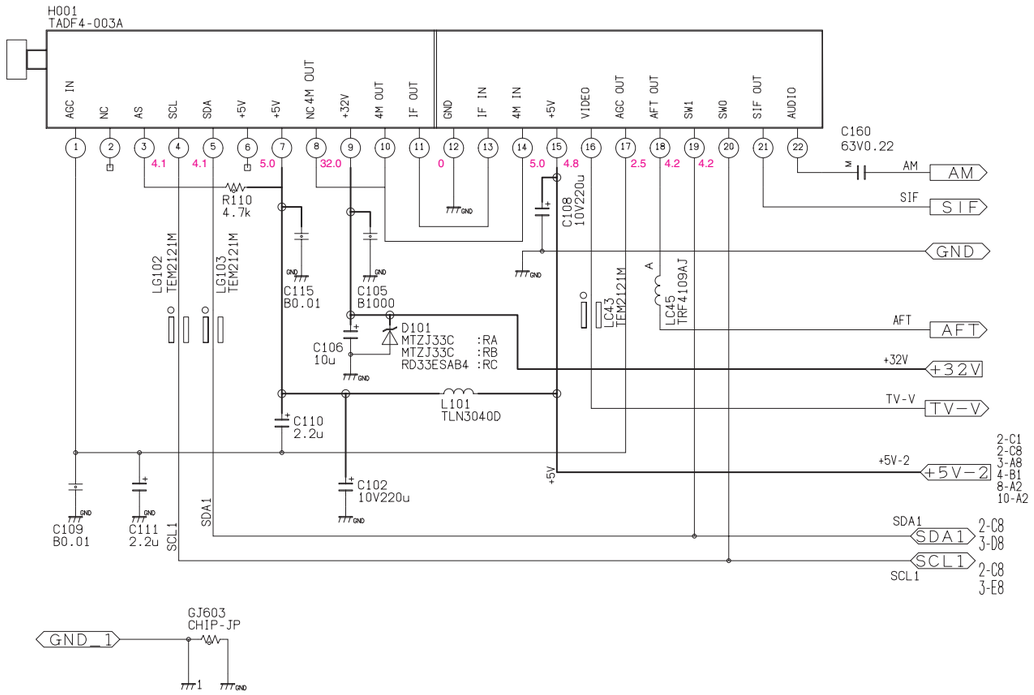
(4/17)

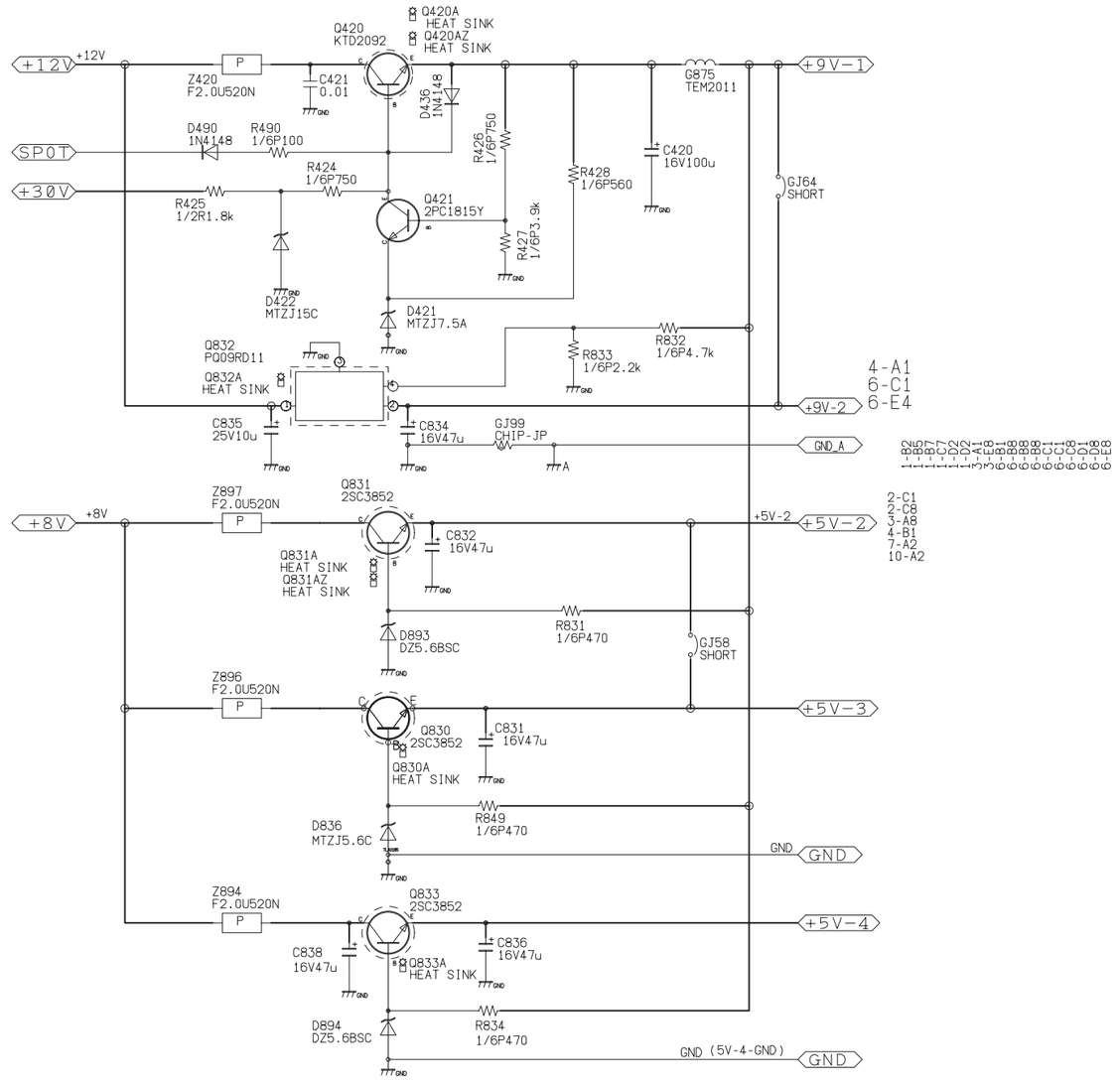

UPCON-BLK
BLK
DFS-GND
DFS-Y
DFS-CB
DFS-CR
GND (EXT-GND)
EXT-Y-IN
EXT-CB-IN
EXT-CR-IN
HD_32k
VD_32k
H_VCC
EXT-Y-SYNC
WPD
AFC
VP
H-DRIVE
GND (DEF/DAC)
L4401 TRF4101AF
L4000 TRF4100AT
Q510 TA1360AFG
L501 TRF4470AF
L503 TRF4470AF
L531 TEM2030AY
L530 TEM2030AY
L511 TEM2030AY
L512 TEM2030AY
Q340 2SC3326B
QX01 2SC3326B
Q424 2SC3326B
Q423 2SC3326B
Q422 2SC3326B
Q451 2SC3326B
Q4465 2SA1576A
Q2104 2PA1015Y
Q2105 2PA1015Y
Q2106 2PA1015Y
Q2107 2SA1576A
Q2108 2SA1576A
Q2109 2SA1576A
Q201 2PC1815Y
D545 UDZS10B
D544 UDZS10B
D502 MA111
D513 MA111
D512 UDZS5.6B
DR12 UDZS10B
DR13 UDZS10B
DR14 UDZS10B
D220 MTZJ9.1C
D221 MTZJ9.1C
D222 UDZSTE175.6B
D223 UDZSTE175.6B
D520 RD2.0ES
+9V
+9V-1
ABL
SDA2
SCL2
SCP
ANALOG-R
ANALOG-G
ANALOG-B
OSD-R
OSD-G
OSD-B
ANALOG-YS
OSD-Ys
R_OUT
G_OUT
B_OUT
VM
+9V-1-CRT
GND_VM
GND_L512
0.9V(p-p) (H)
0.78V(p-p) (H)
0.53V(p-p) (H)
0.75V(p-p) (H)
3.5V(p-p) (H)
3.4V(p-p) (H)
3.6V(p-p) (H)
32ZP46P/36ZP46P
SIGNAL (BEP)
SHEET-5/10

(5/17)


H002 MPSA11A
L/R/WOODER
SL/SR/CENTRE
Q670 TA8256BH
Q640 TA8256BH
Q670A HEAT SINK
Q670AZ HEAT SINK
Q640A HEAT SINK
Q608 2SA1576A
Q612 2SA1576A
Q617 BA4558
Q620 BA4558
Q673 2SC3326B
Q672 2SC3326B
Q671 2SC3326B
Q688 RN1404
Q639 2SC3326B
Q641 2SC3326B
Q642 2SC3326B
D629 RD22MB2
GND_MODULE
GND_AUDIO
SROUND_GND
W_GND
L_GND
R_GND
C_GND
W_APR0
L_APR0
R_APR0
SR_APR0
SL_APR0
C_APR0
MUTE_HP
MUTE_A
MUTE_E
MUTE_S
MUTE_C
A_MUTE
DET_HP
PD1009B
32ZP46P/36ZP46P
SIGNAL (AUDIO)
SHEET-6/10

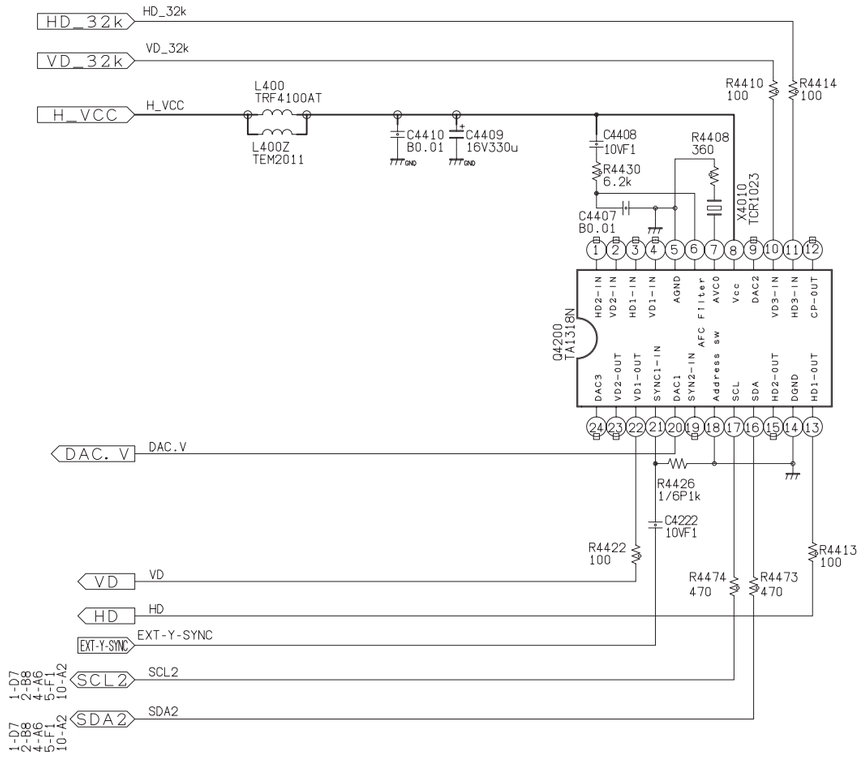
(6/17)


H001
TADF4-003A
AGC IN
NC
AS
SCL
SDA
+5V
+5V
NC
4M OUT
+32V
4M OUT
IF OUT
GND
IF IN
4M IN
+5V
VIDEO
AGC OUT
AFT OUT
SW1
SWO
SIF OUT
AUDIO
4.1
4.1
5.0
32.0
0
5.0
4.8
2.5
4.2
4.2
C160
63V0.22
AM
SIF
GND
AFT
+32V
TV-V
+5V-2
SDA1
SCL1
R110
4.7k
C108
10V220u
LG102
TEM2121M
LG103
TEM2121M
C115
B0.01
C105
B1000
D101
MTZJ33C :RA
MTZJ33C :RB
RD33ESAB4 :RC
C106
10u
LC43
TEM2121M
LC45
TRF4109AJ
L101
TLN3040D
C110
2.2u
C102
10V220u
C109
B0.01
C111
2.2u
2-C1
2-C8
3-A8
4-B1
8-A2
10-A2
2-C8
3-D8
2-C8
3-E8
GJ603
CHIP-JP
GND_1

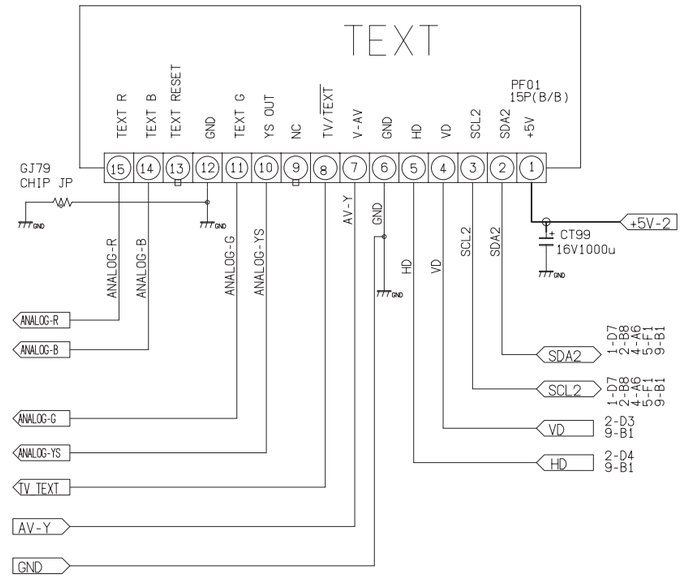


32ZP46P/36ZP46P
SIGNAL (LOW-B REGULATOR)
SHEET-8/10

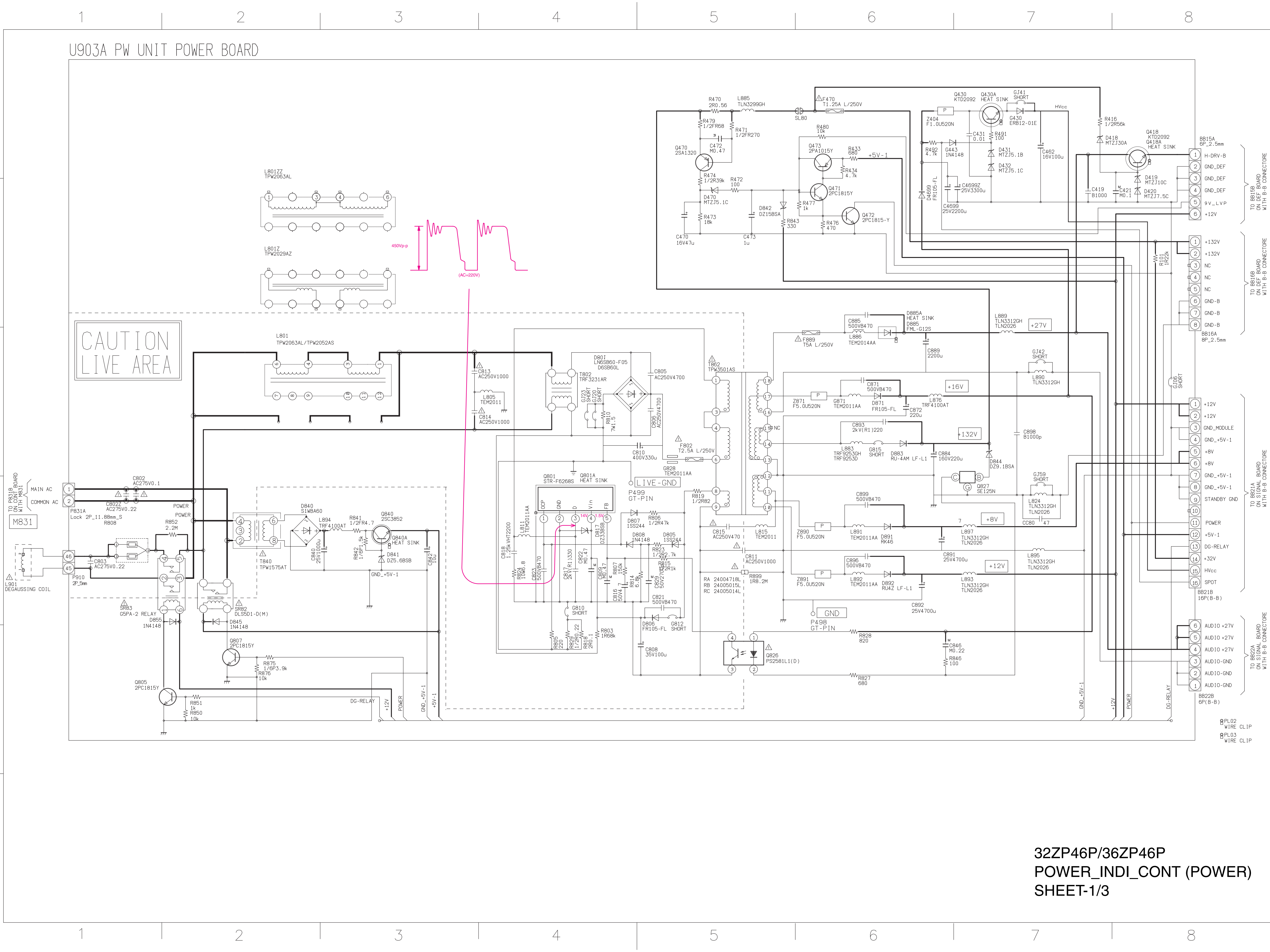
(8/17)



32ZP46P/36ZP46P
SIGNAL (FREQ_DET)
SHEET-9/10

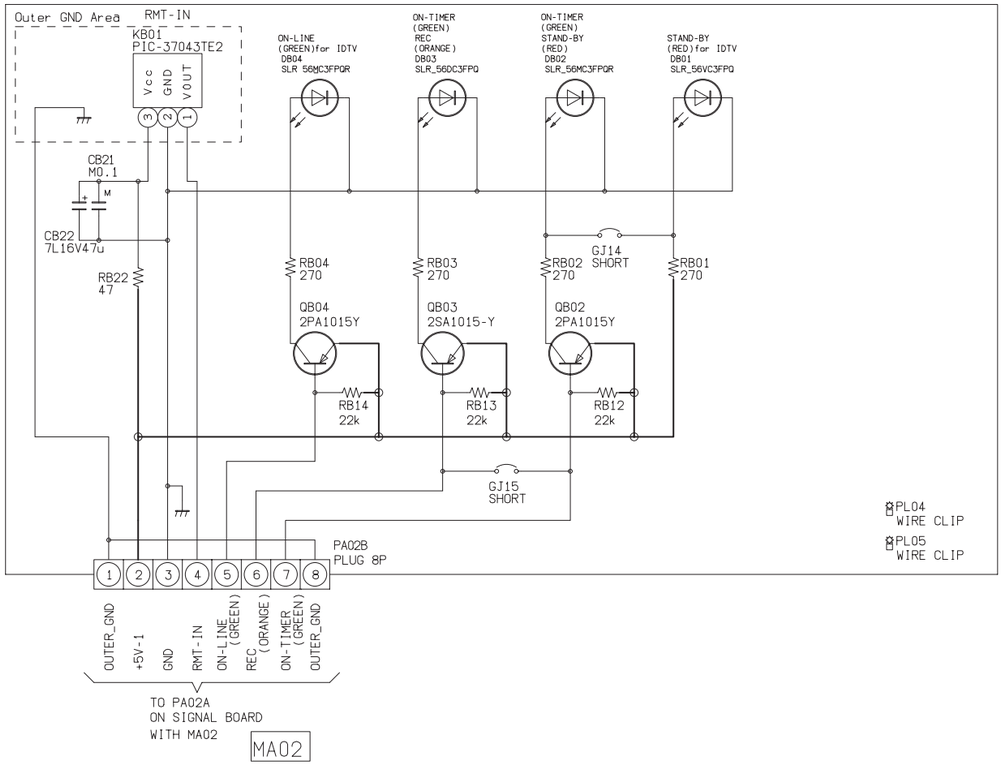


32ZP46P/36ZP46P
SIGNAL (TEXT)
SHEET-10/10

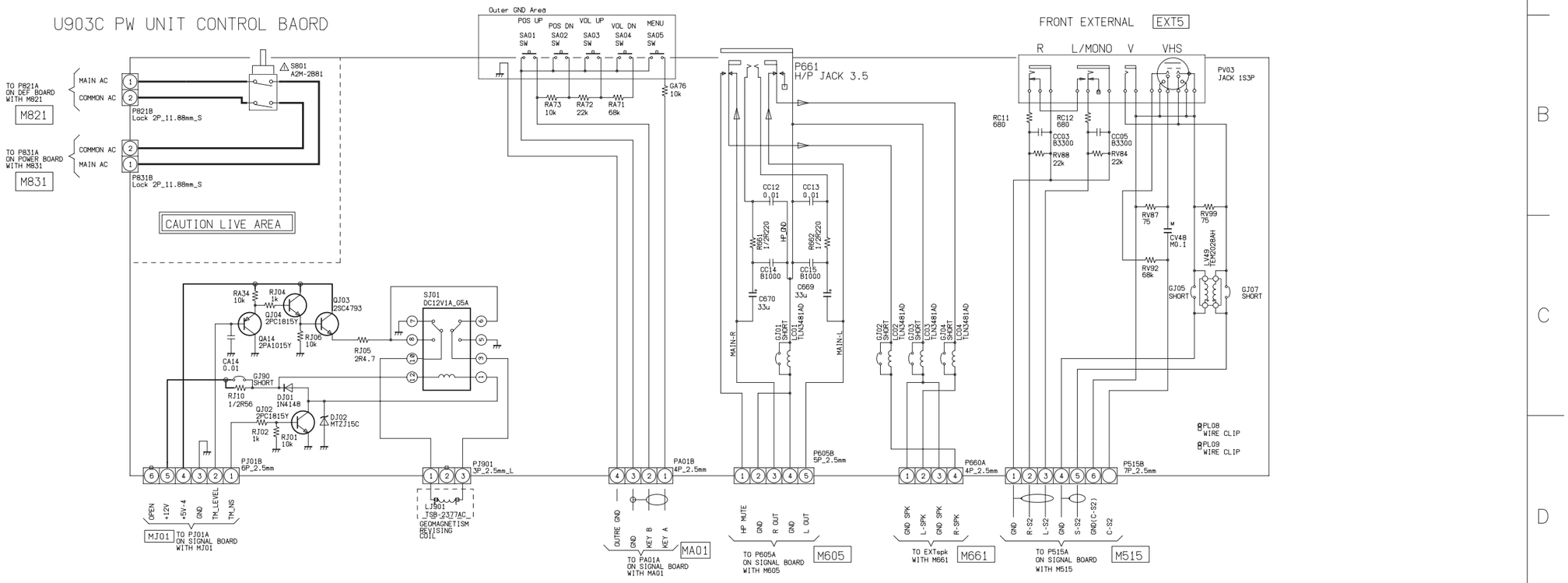

U903A PW UNIT POWER BOARD
CAUTION LIVE AREA
L801ZZ TPW2063AL
L801Z TPW2029AZ
450Vp-p
(AC=220V)
L801 TPW2063AL/TPW2052AS
C813 AC250V1000
L805 TEM2011
C814 AC250V1000
T802 TRF3231AR
GJ23 SHORT
GJ20 SHORT
R810 7W1.5
D801 LN6SB60-F05 D6SB60L
C805 AC250V4700
C806 AC250V4700
C810 400V330u
F802 T2.5A L/250V
G828 TEM2011AA
T862 TPW3501AS
LIVE-GND
P499 GT-PIN
Q801 STR-F6268S
Q801A HEAT SINK
OCP
GND
D
Vin
FB
14V
1.5V
L811 TEM2011AA
C818 1.25kVHT2200
R824 10W6.8
C823 500VB470
C817 2kV(R1)330
C822 M0.47
D817 DZ33BSB
C809 M0.47
R807 150k
C816 50V4.7
R814 6.8k
C829 50V2700
D807 1SS244
R806 1/2R47k
D808 1N4148
D805 1SS244
R823 1/2R2.7k
R815 1/2R1k
R819 1/2R82
C821 500VB470
G810 SHORT
D806 FR105-FL
G812 SHORT
C808 35V100u
R805 220
R829 1/2R0.22
R818 2R0.1
R803 1R68k
C815 AC250V470
L815 TEM2011
C811 AC250V1000
R899 1R8.2M
RA 24004718L
RB 24005015L
RC 24005014L
Q826 PS2581L1(D)
GND
P498 GT-PIN
R828 820
R827 680
C846 M0.22
R846 100
TO P831B ON CONT BOARD WITH M831
MAIN AC
COMMON AC
M831
C802 AC275V0.1
C802Z AC275V0.22
P831A Lock 2P_11.88mm_S
R808
POWER
POWER
R852 2.2M
L901 DEGAUSSING COIL
C803 AC275V0.22
P910 2P_5mm
SR83 G5PA-2 RELAY
D855 1N4148
SR82 DLS5D1-D(M)
D845 1N4148
T840 TPW1575AT
D840 S1WBA60
L894 TRF4100AT
R841 1/2FR4.7
Q840 2SC3852
Q840A HEAT SINK
R842 1/6P1.5k
D841 DZ5.6BSB
C840 25V1000u
C842 10u
GND_+5V-1
Q807 2PC1815Y
R875 1/6P3.9k
R876 10k
Q805 2PC1815Y
R851 1k
R850 10k
DG-RELAY
+12V
POWER
GND_+5V-1
+5V-1
R470 2R0.56
L885 TLN3299GH
F470 T1.25A L/250V
SL80
R479 1/2FR68
R471 1/2FR270
C472 M0.47
Q470 2SA1320
R474 1/2R39k
R472 100
D470 MTZJ5.1C
R473 18k
C470 16V47u
C473 1u
D842 DZ15BSA
R843 330
R480 10k
Q473 2PA1015Y
R433 680
+5V-1
R434 4.7k
Q471 2PC1815Y
R477 1k
R476 470
Q472 2PC1815-Y
Q430 KTD2092
Q430A HEAT SINK
GJ41 SHORT
G430 ERB12-01E
Z404 F1.0U520N
HVcc
C431 0.01
R491 100
R492 4.7k
G443 1N4148
D431 MTZJ5.1B
D432 MTZJ5.1C
C462 16V100u
D4699 FR105-FL
C4699Z 25V3300u
C4699 25V2200u
R416 1/2R56k
D418 MTZJ30A
Q418 KTD2092
Q418A HEAT SINK
C419 B1000
C421 M0.1
D419 MTZJ10C
D420 MTZJ7.5C
BB15A 6P_2.5mm
H-DRV-B
GND_DEF
GND_DEF
GND_DEF
9V_LVP
+12V
TO BB15B ON DEF BOARD WITH B-B CONNECTORE
+132V
+132V
NC
NC
NC
GND-B
GND-B
GND-B
R101 1R22k
BB16A 8P_2.5mm
TO BB16B ON DEF BOARD WITH B-B CONNECTORE
C885 500VB470
D885A HEAT SINK
D885 FML-G12S
F889 T5A L/250V
L886 TEM2014AA
C889 2200u
L889 TLN3312GH TLN2026
+27V
GJ42 SHORT
L890 TLN3312GH
GJ06 SHORT
Z871 F5.0U520N
G871 TEM2011AA
C871 500VB470
D871 FR105-FL
C872 220u
L876 TRF4100AT
+16V
NC
C893 2kV(R1)220
L883 TRF9253GH TRF9253D
G815 SHORT
D883 RU-4AM LF-L1
C884 160V220u
+132V
D844 DZ9.1BSA
C898 B1000p
Q827 SE125N
GJ59 SHORT
L824 TLN3312GH TLN2026
CC80 47
C899 500VB470
Z890 F5.0U520N
L891 TEM2011AA
D891 RK46
L897 TLN3312GH TLN2026
+8V
C891 25V4700u
L895 TLN3312GH TLN2026
C896 500VB470
Z891 F5.0U520N
L892 TEM2011AA
D892 RU4Z LF-L1
L893 TLN3312GH TLN2026
+12V
C892 25V4700u
+12V
+12V
GND_MODULE
GND_+5V-1
+8V
+8V
GND_+5V-1
GND_+5V-1
STANDBY GND
POWER
+5V-1
DG-RELAY
+32V
HVcc
SPOT
BB21B 16P(B-B)
TO BB21A ON SIGNAL BOARD WITH B-B CONNECTORE
AUDIO +27V
AUDIO +27V
AUDIO +27V
AUDIO-GND
AUDIO-GND
AUDIO-GND
BB22B 6P(B-B)
TO BB22A ON SIGNAL BOARD WITH B-B CONNECTORE
GND_+5V-1
+12V
POWER
DG-RELAY
PL02 WIRE CLIP
PL03 WIRE CLIP

32ZP46P/36ZP46P
POWER_INDI_CONT (POWER)
SHEET-1/3

U903B PW UNIT INDICATOR BAORD

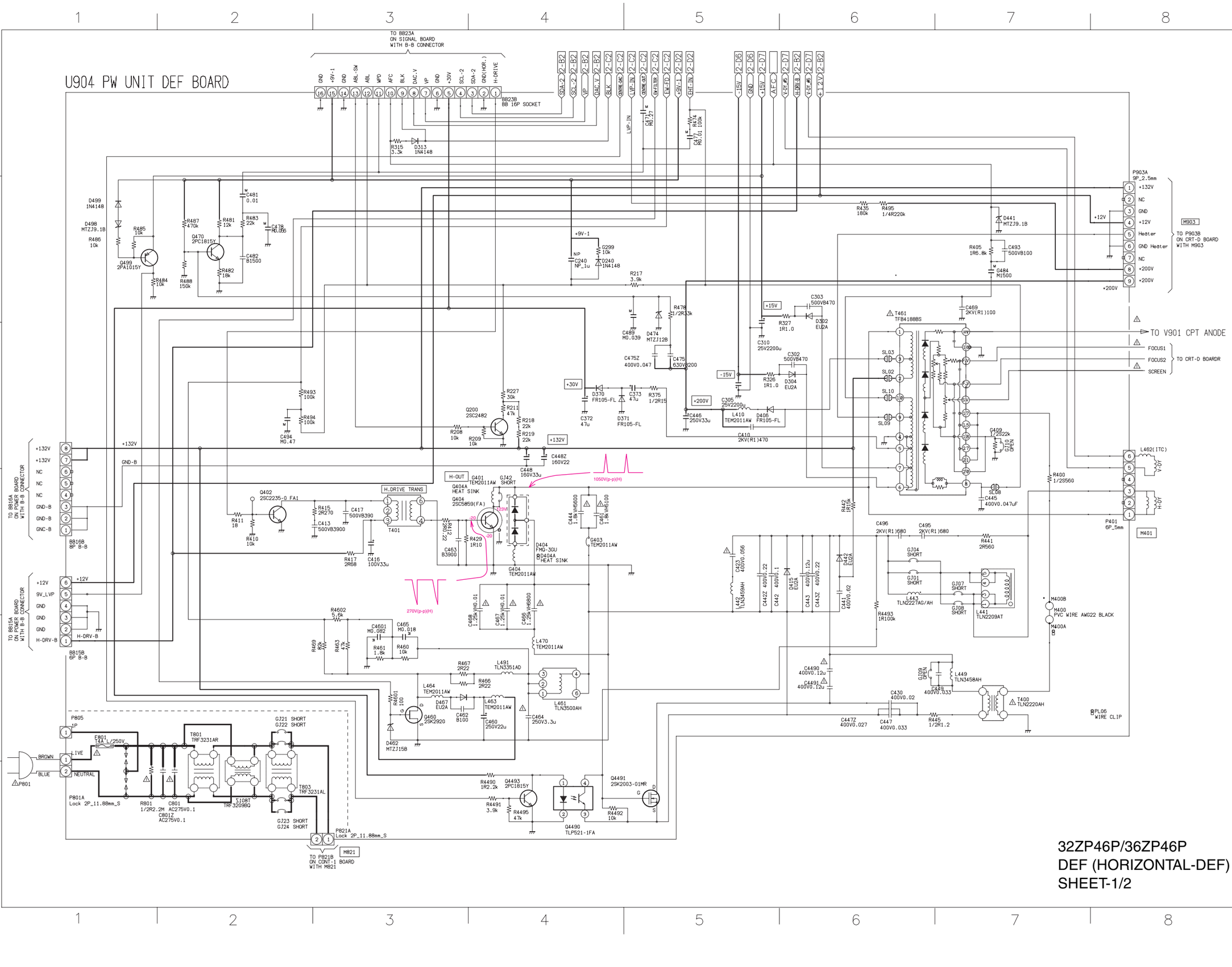


32ZP46P/36ZP46P
POWER_INDI_CONT (INDICATOR)
SHEET-2/3



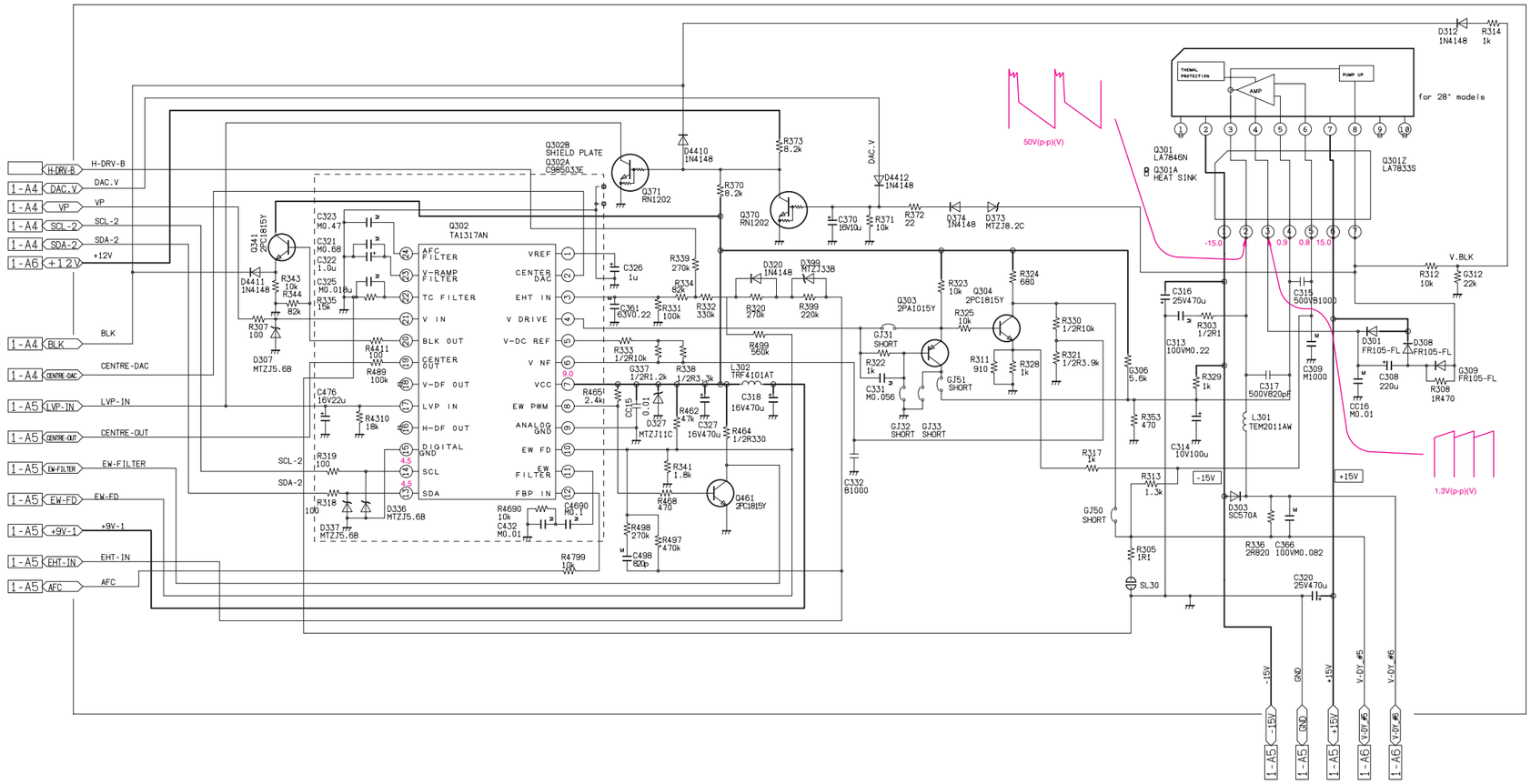
32ZP46P/36ZP46P
POWER_INDI_CONT (CONTROL)
SHEET-2/3

U904 PW UNIT DEF BOARD



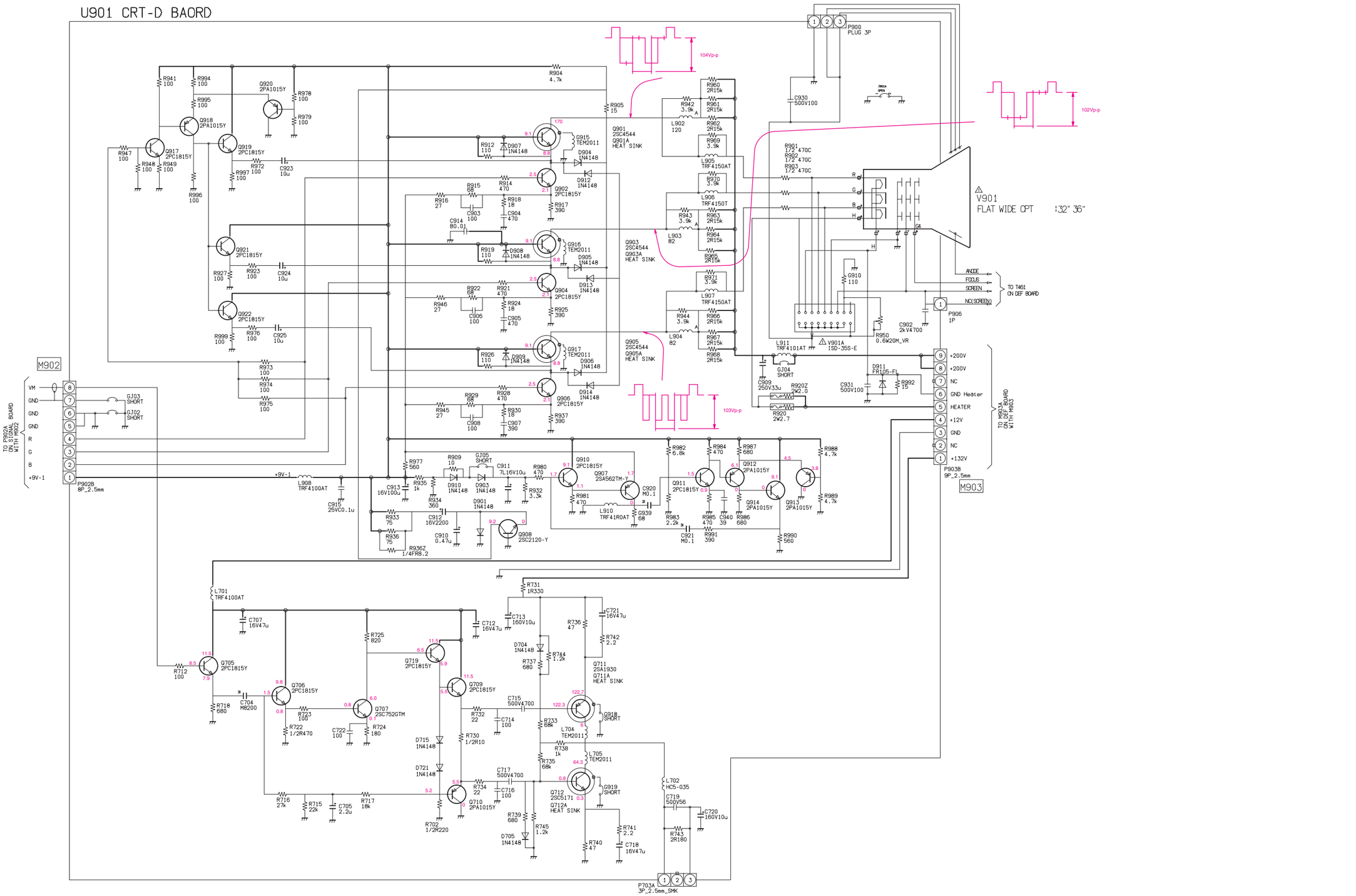
32ZP46P/36ZP46P
DEF (HORIZONTAL-DEF)
SHEET-1/2

U904 PW UNIT DEF BOARD

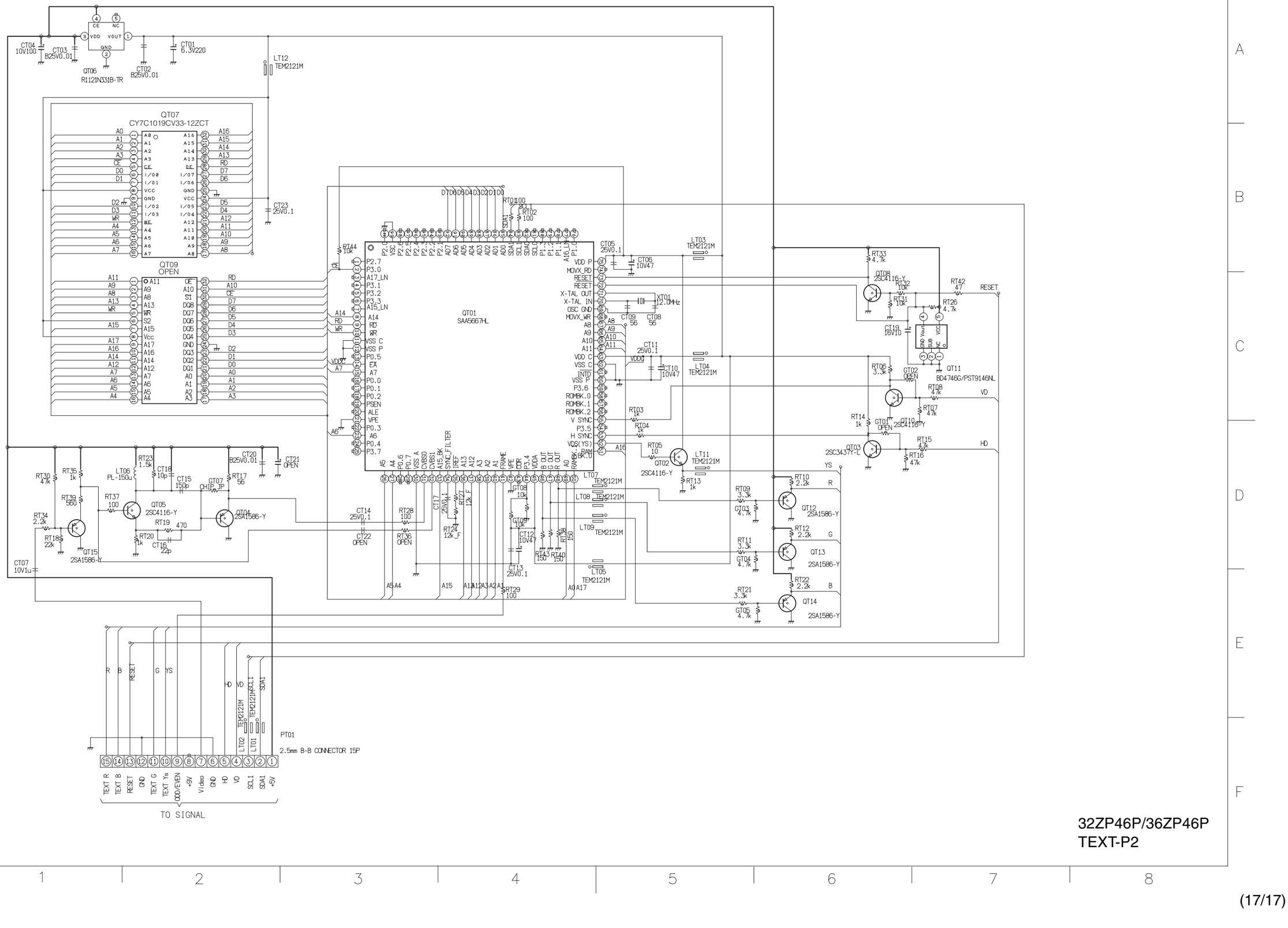


32ZP46P/36ZP46P
DEF (VERTICAL-DEF)
SHEET-2/2

U901 CRT-D BAORD



32ZP46P/36ZP46P
CRT


QT01
SAA5667HL
QT06
R1121N331B-TR
QT07
CY7C1019CV33-12ZCT
QT09
OPEN
QT05
2SC4116-Y
QT04
2SA1586-Y
QT15
2SA1586-Y
QT02
2SC4116-Y
QT03
2SC3437Y-L
QT08
2SC4116-Y
QT11
BD4746G/PST9146NL
QT10
2SC4116-Y
QT12
2SA1586-Y
QT13
2SA1586-Y
QT14
2SA1586-Y
PT01
2.5mm B-B CONNECTOR 15P
TEXT R
TEXT B
RESET
GND
TEXT G
TEXT Ys
COMP/EVEN
+9V
Video
GND
HD
VD
SCL1
SDA1
+5V
TO SIGNAL
32ZP46P/36ZP46P
TEXT-P2